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An Address
ON
CHRONIC MASTITIS AND ITS RELATION TO CARCINOMA.

Delivered before the North London Medico-Chirurgical Society on Jan. 13th, 1910,

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MR. PRESIDENT AND GENTLEMEN,—Chronic mastitis is often mistaken for cancer. This error usually leads to delay. As everyone is now aware, from the smallest growth in the breast cancer spreads into the lymphatic system with great rapidity. When once established in the lymphatic system the cure by operation, or any other means, is uncertain.

The information which I have collected will be taken in inverted order. First, the pathology of chronic mastitis; secondly, the clinical characters; and thirdly, the relation of chronic mastitis to cancer of the breast. Concerning each of these much remains to be learnt. Unfortunately I have not had the leisure to read what others have written. But although we may not have clear and scientific evidence on all of these three points, nevertheless we have a simple and scientific method of diagnosis leading to a rational method of treatment.

In the beginning let us try to be clear as to the meaning of terms. I cannot help thinking that the term "chronic mastitis" is apt to mislead. Anyone might infer from it that there was but one kind of chronic inflammation of the mammary glands. They might even go further and assume that that had only one cause. But I strongly suspect that there are several kinds of chronic inflammation of the breast and that they owe their origin to several causes. Eschew the dead language and translate chronic mastitis into English. Then we should speak of chronic inflammation of the breast. But that would not be correct, because we ought to say chronic inflammations of the breast. The term would convey still more to the mind if we qualified it and spoke of chronic non-suppurative inflammations of the breast. These forms of inflammation seldom or never end in suppuration. If pus appeared the disease would probably be tuberculous.

One of the most obvious effects of the various forms of chronic mastitis is to cause a tumour or tumours in the breast; at times the whole of the mammary gland is affected and its hard circular outline can be felt beneath the skin. The hardness is seldom uniform. Amongst the hard breast tissues harder nodules can sometimes be felt, and may be tense cysts. When a mammary tumour of this kind is cut into, the section is almost that of a normal gland, but is tougher, and some fluid usually jets out of the cysts; clinically this variety is the least misleading. Both breasts are usually diseased, but the clinical diagnosis is not to be trusted. For example:—

A patient of somewhat mature years was diagnosed two years before I saw her to be suffering from chronic mastitis. There was retraction of the left nipple, and beneath the areola there was a hard swelling. The surrounding mammary gland felt knotted and likewise the right mammary gland. When the hard swelling beneath the nipple was cut into, the naked eye confirmed the diagnosis of chronic mastitis, but when sections were made by Mr. Ernest Shaw we found that the lump was mainly chronic mastitis, but it had in it commencing carcinoma, so that a complete operation was done. It is reasonable to think that if the clinical diagnosis had been trusted that patient would afterwards have had extensive carcinoma of the breast.

Here is an example of the converse:—

A patient had a tumour in both breasts, and both breasts were rather hard. The left breast had been diagnosed as being cancerous, and it is said that the diagnostician gave the patient but a short span of life. However, when the left breast was cut into, the tumour contained small cysts full of a fluid rather like cream, and the sections proved to be ordinary chronic mastitis. Of course, the error of diagnosis was speedily and easily corrected by that exploration and a microscopical section.

Sometimes the chronic mastitis is confined to a lobe of the mammary gland, then the characteristic pyramidal shape can be felt, with the apex ending in a thickened duct which runs to the nipple. Here the clinical diagnosis seems clear enough. But before I conclude it will be seen that chronic inflammation of the mammary gland is often associated with carcinoma. Once when an inflamed lobe was excised it was found to be an inflamed and cystic adenoma. One of these lobular tumours, which was rather tender and exceedingly difficult to define, afterwards proved to be merely inflamed, although clinically we had a very strong suspicion that it was carcinoma. Often chronic mastitis causes a single hard tumour in the breast. Those who have faith in their powers of diagnosis are prepared to say whether this tumour is cystic or solid, but how can anyone tell in a case like this. A patient, somewhere about 50 years of age, with a very large breast, had a tumour which I think anybody would have guessed to be carcinoma. However, when that was cut into we found in its interior a cyst of considerable size. This cyst had been masked by the surrounding mastitis. It might be supposed that a cyst of large size would fluctuate. For years I have taken the greatest pains to feel these hard tumours of the breast with a view to ascertaining if they fluctuate, but as a rule the cyst in a case of chronic mastitis is surrounded by so much inflammation that it does not fluctuate. I could give numerous instances in which that was so. Here is another:—

A stout woman had in the breast a tumour which had all the clinical characters of a solid growth. Of course, it was very strongly suspected that this was a carcinoma; however, when it was cut into, the sections were those of chronic mastitis, and in the centre of it was a small cyst. I see that the note says that the mammary ducts were dilated, and contained a fluid like cream.

The tumour which chronic mastitis causes has, like most cancers, no capsule. But when tumours of the breast are in question much reliance cannot be placed upon the presence of a capsule, although a tumour which has a capsule is usually innocent. Here is a case of a carcinoma which had a fibrous capsule:—

A tumour of the left breast was cut into and microscopically examined and found to be a carcinoma. I see Mr. Shaw's report of the macroscopic characters of this tumour says, "A firm rounded mass of malignant growth 1½ inches in diameter; greyish-white in colour, and surrounded by an ill-marked capsule of fibrous tissue."

I can recall another instance in which there was not an "ill-marked capsule" but a very well-marked one full of cancer. So that it must not be inferred because a tumour of the breast has a capsule that therefore it is innocent.

On the whole, the presence of a cyst in the midst of a mammary tumour is a favourable sign. Cysts are found in innocent types of disease such as chronic mastitis and in cystic adenoma, but the presence of a cyst is not a reliable sign. In chronic mastitis the cyst is often a dilated duct and may contain a papilloma, and that may be either innocent or malignant. An innocent papilloma need not give rise to apprehension. A patient with chronic mastitis with cysts had in one of them a papilloma with a long thin stalk, and when sections were cut through the attachment of the papilloma to the cyst there was no trace of infiltration. That was innocent. But in other instances the base of the papilloma was obviously carcinomatous and spreading beyond the cyst into the surrounding breast.

Great attention should be given to the epithelium of the cyst walls. At times it is beginning to run wild and enter the lymphatic spaces, suggesting commencing carcinoma. For instance, a patient with chronic mastitis had cysts, and it was found at the histological examination that the epithelium of the cysts was beginning to infiltrate the tissues. It is not unusual in chronic mastitis to see the epithelium beginning to run wild and enter the lymphatic paths. There is no proof, but only a strong suspicion that in cases such as that carcinoma may have been beginning. Here is another instance:—

A woman had had a tumour removed from the right breast some seven years before. Another tumour appeared almost beneath the scar. This felt exceedingly hard and solid, and over it the skin was a little dimpled, of course suggesting

that the lump might be a carcinoma. However, it proved to be chronically inflamed breast tissue with rather a large cyst in the centre of it. Here, again, the epithelial lining of the cyst had begun to run wild and spread into the lymphatic spaces of the breast, so that one could not help thinking that she, too, was threatened with carcinoma. This may be a wrong surmise, but I cannot help thinking that anybody who has seen many sections of carcinoma of the tongue or of the breast, and seen in them the same kind of epithelial infiltration, would be equally suspicious.

Another case of chronic mastitis with cysts proves that one should not be content with the examination of only one of the cysts:—

A woman was operated upon and the chronically inflamed breast tumour was found to contain rather a large thin-walled cyst full of clear fluid, some of which could be squeezed from the nipple. The cyst contained a papilloma and some old clot. I next met with another smaller cyst of a similar kind When this was microscopically examined its wall contained a growth of cancer, so that had not both cysts been looked at, I might have done an incomplete operation and left the patient with cancer in her breast and lymphatics.

When the tumour of chronic mastitis is solid the macroscopic appearances are quite fallacious, and cannot be trusted in the least. This is so with other inflammatory growths. For instance, I removed the testicle of a little boy, and when cut into the naked eye appearances suggested sarcoma. However, the microscopical examination proved that it was tuberculous.

I now come to another branch of my subject and refer to some of the clinical signs. But the clinical signs in cases of chronic mastitis are exceedingly fallacious.

A woman said that she had had a discharge from her nipple for some years; the nipple was retracted and had beneath it a hard irregular tumour, and there were also enlarged axillary glands. This tumour was incised, but my pathological colleague absolutely declined to give an opinion founded on the naked-eye evidence. A cyst was opened and then the microscopical examination disclosed chronic mastitis. In another instance both the clinical and macroscopic characters were very misleading. Basing my opinion on them I removed the whole breast. Whilst this was going on the histologist proceeded to make an examination. This was done because the tumour looked like scirrhus cancer in section, because the nipple was retracted, and the axillary glands were enlarged. I did not think it was necessary to wait and see the microscopical sections and was greatly surprised to be told that it was a case of chronic mastitis. Naturally I do not now place much reliance upon the clinical signs nor upon the naked-eye appearances. Whatever the section had looked like to the naked eye, anyone would have had his mind biased by those clinical signs. The converse may hold. In another instance the macroscopic section of the tumour was said to be chronic mastitis, but it proved to be a carcinoma.

Fortunately, the morbid histology of chronic mastitis is exceedingly clear and simple. Sections of it stain well and are quite easy to recognise. Within five minutes of the exploratory incision a definite diagnosis can be made. When such sections are seen they are the easiest sections of all to interpret. In the section there are seen the duct, the branches of the duct, ending in acini, and round this little lobule of breast is the halo of inflammatory cells, some of which may be developing into fibrous tissue. Great attention should be paid to the epithelium which lines the ducts. After what I have said you would be very suspicious if epithelium was not arranged as an orderly layer within its basement membrane. With reference to the clinical signs, most cases of chronic mastitis are rather tender to the touch and sometimes there is a moderate degree of pain. Here is an instance in which the pain was excessive and led us to suppose that the tumour in the left breast would prove to be a carcinoma, but the microscope showed that it was caused by chronic inflammation.

A discharge from the nipple, especially a sanious discharge, awakens a fear of cancer; but a sanious discharge may be met with when chronic mastitis has caused dilatation of the duct. As a rule, the discharge of blood from the nipple indicates that there is a papilloma in the cyst or ampulla, but not necessarily a malignant one. Here is a case in which a dilated duct contained a papilloma with a long, thin stalk and similar to the case which I have already mentioned. But, as I have said, it is never safe to assume that these intracystic papillomata are innocent until the microscopical sections have been carried through the junction of the papilloma with the wall of the cyst. This was so in this instance in which blood exuded from the nipple. The cyst was opened, and the pathologist who was present looked at it with the naked eye and said that it was a case of chronic mastitis. However, the microscope showed that we had to deal with a duct carcinoma. To my mind the expression "duct carcinoma" is rather misleading. Sometimes I suppose it means a carcinoma growing into a duct, but at other times it means a carcinoma in which the histological structure looks as if it was made of numerous ducts with cubical or columnar epithelium. I have observed that in one part of a carcinoma there may be the ordinary appearances, whilst in another part there is an arrangement which makes you think that it consists of closely packed, ill-arranged ducts.

The position of the tumour does not help in the diagnosis. The tumour caused by chronic mastitis is met with oftenest in the lobes of the breast, but I have mentioned a case in which the tumour was situated beneath the nipple and had in it a commencing carcinoma. In another case similar tumour beneath the right nipple proved to be carcinoma. I have mentioned a case of dimpling of the skin which was misleading, the dimpling being situated over an inflammatory tumour with a cyst in the centre. As a rule dimpling of the skin awakens a suspicion of cancer. I have also mentioned cases showing that retraction of the nipple occurs not only in carcinoma but also in chronic mastitis. The tumour in chronic mastitis does not slip about in the breast as an innocent adenoma does, but elsewhere[1] I have described a carcinoma which was wrongly diagnosed for an adenoma because of its mobility, and not long ago I met with another. A patient had a moveable tumour in the right breast with a slight dimpling of the skin over it; this tumour proved to be carcinoma.

The causation of chronic mastitis is, to my mind, most obscure, and I doubt whether it has yet been properly investigated. Tubercle has, of course, been suspected, and in the following instance none was found. A woman had chronic mastitis with cysts full of fluid which looked like cream, because it contained granules of fat and oil globules. Tubercle was industriously searched for but none could be found. Once cultures were taken from that creamy fluid but with negative results.

In the following case there is some evidence that an infection may have passed along the dilated ducts and caused chronic mastitis. The patient had had for a very long period inflammation of the left nipple. When seen it was covered with a crust, which easily came off. Beneath the nipple was a hard lump and there was another in the outer segment of the breast. Both were found to be chronic mastitis. I suspect that in that particular instance the infection passed along the ducts and caused the chronic mastitis. I am quite aware that I may be straining your imaginations a little to ask you to believe that the hard lump in the outer segment had arisen in the same way.

I have also some reason to suppose that the infection in chronic mastitis may be carried by the blood stream.

A patient was diagnosed to have chronic septic inflammation of the gall-bladder with gall-stones. I was called in to operate upon the gall-bladder, but found hard tumours in both mammary glands. Clinically these were like carcinomata. Clearly it would not be right to put the patient to the risk and extreme discomfort of cholecystotomy if she was about to die from cancer of both her breasts. However, when an incision was made it was found that she had ordinary chronic mastitis; the gall-bladder was then cleared out and both breasts recovered.

On another occasion I operated upon a patient for hæmorrhoids, so she had for a time a septic wound. Whilst recovering from the operation a hard lump appeared in the right breast and for a time increased in size. It was a little tender, and the suspicion of a growth arose. It began, however, to diminish, so I have always thought that I there had to do with chronic mastitis, and that the breast might have got infected from the septic wound.

That chronic mastitis has some relation to cancer has already been seen in the case in which the cyst wall was

[1] Clinical Lectures and Addresses in Surgery, C. B. Lockwood, p. 264

cancerous. Here is an instance in which the centre of the inflammatory tumour had cancer in it.

A woman had a hard tumour of the right mammary gland. This was removed and a portion of it was examined, and it proved to be chronic mastitis. However, the whole circumstances were so suspicious that the investigation was carried further. When the centre of the lump was examined it was found to contain a small nodule of carcinoma. Now in this instance I cannot help thinking that the chronic mastitis came first and had predisposed to the cancerous growth in its centre. If cancer were to cause chronic mastitis we should see a great deal of chronic mastitis in the vicinity of cancerous growths, but we do not. There may be a slight inflammation of the breast but there is not a condition which amounts to chronic mastitis.

The next is a case in which the right breast had been removed together with some lymphatic glands from the posterior triangle of the neck. In the following year the left breast had a tumour in it. When this was removed one side of the tumour consisted of a chronically inflamed mammary gland, but on the other side of it there was carcinoma. My note also says that no glands could be felt in the axilla, but unfortunately a great many were found after the axilla had been cleared out. This is not an unusual experience and detracts from diagnostic value which some attach to the presence or absence of lymphatic enlargement.

Now what is the relationship between chronic mastitis and carcinoma? In the tongue a long-continued chronic inflammation and ulceration is known to end in epithelioma. Everyone has seen epithelioma implanted upon a long-standing chronic ulcer of the leg. In the Cancer Research Reports[2] a graphic account is given of cancer in the inhabitants of Kashmir—here scorching of the skin of the abdomen by a hot brazier often ended in cancer, so that it is reasonable to infer that a long-continued inflammation of the mammary gland may end in its epithelium running wild and forming a cancer, as it does in the tongue and elsewhere.

In cases of chronic mastitis and also in cases of cancer there is often the history of an injury, and often that history is given truthfully. A blow causes some bruising, and the effects of a blood extravasation in the tissues are well known. After the blood has clotted it causes the neighbouring tissues (in this instance the mammary gland is the neighbouring tissue) to inflame, and if the inflammation does not subside then a chronic mastitis is established. After what has been said we cannot deny the possibility of cancer being implanted upon that chronic mastitis.

Cancer may be associated with a known form of infective inflammation—viz., tubercle. I have always been much puzzled to account for the following:—

The patient had a tumour of the right breast and it was known that she had some enlargement of the axillary lymphatic glands. The tumour in the breast was a carcinoma. The complete operation was performed, and a great many enlarged glands were found along the axillary vein. I took rather a gloomy view of the future on account of the glands and was surprised to see that the enlarged lymphatic glands contained tubercle and not carcinoma. I have not been able to guess how these diseases came to be associated.

I do not intend to enter upon the surgical treatment of chronic mastitis, but merely say that it is to my mind clear and simple. First, an anæsthetic; secondly, an exploratory incision; and thirdly, an immediate microscopical examination. That will afford information upon which the next steps are based. If the sections proved to be sections of chronic mastitis I proceed to remove the chronically inflamed part of the breast with as little scarring as possible, and should it be necessary to remove a considerable portion of the mammary gland I always endeavour to leave the nipple. In one instance in which that was done the whole right gland was removed, but the nipple was left. Chronic mastitis was known to exist in the other breast, and afterwards the opposite breast required removal. I remember the patient remarked that she did not mind having that done provided I would leave the nipple. The other day a man who was a scavenger in the City came with carcinoma of the breast. He said he did not mind having the tumour removed provided we left the nipple. What was proceeding in that man's mind I cannot imagine, but even he attached importance to the preservation of the nipple and areola.

[2] Third Scientific Report, Imperial Cancer Research Fund, by E. F. Bashford, p. 19.

A Clinical Lecture

ON

TUBERCULAR DISEASES OF THE SKIN AND THEIR TREATMENT.

Delivered at the Medical Graduates' College and Polyclinic on Nov. 15th, 1909,

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GENTLEMEN,—In speaking of tubercular diseases of the skin it is well at the outset to draw a distinction between those in which the tubercle bacillus is constantly found and which give positive inoculation results in susceptible animals such as the guinea-pig, and those which do not constantly fulfil these conditions. The lesions of the first group are undoubtedly caused by the tubercle bacillus of Koch; those of the second group, commonly known as tuberculides, are caused either by the soluble toxins of the tubercle bacillus or by attenuated tubercle bacilli which have been damaged or killed by phagocytes or other defending forces of the body before they reach the skin. To the first group belong lupus vulgaris, lupus verrucosus, gummatous, suppurative, and vegetating tuberculosis of the skin. The second group, or so-called tuberculides, is made up of lupus erythematosus, lichen scrofulosorum, acne cachecticorum, erythema induratum, folliclis, and acnitis. There are also some doubtful tuberculides, which might perhaps come under the heading of tubercular diseases of the skin, but I do not propose to include these in this paper. The best known and most important member of the first group is lupus vulgaris, and there are few skin diseases which are more troublesome and require greater judgment in the matter of treatment than lupus vulgaris. The insidious onset, steady advance, and chronic course of the disease are characteristic, while the disfigurement to which it gives rise and its frequent association with other forms of tuberculosis make it a disease to be reckoned with and dreaded. And inasmuch as it most frequently attacks the humbler and poorer classes of the community, the disease has in many cases obtained a firm hold before the patient seeks advice, and the greatest difficulty may consequently be experienced in preventing such disfigurement as will in the end prevent him earning his livelihood and providing for those dependent on him. Then, again, the disease is capable of assuming diverse forms, and even when untreated is liable to periods of betterment, followed by relapse, so that, even if the lesions are correctly diagnosed, the patient or patient's friends are apt to discontinue or neglect the necessary treatment, and the nodules multiply and the lesions extend, slowly it is true, but none the less surely. In a large proportion of cases there is a definite history of tuberculosis in the family, and the patient himself may have other manifestations of tuberculosis, but lupus does not seem to be hereditary and is not often found in two members of one family.

The lupus affection of the skin may be either primary or secondary. Primary lupus, or inoculation lupus, is chiefly found on the uncovered portions of the skin, and is brought about by the entrance of tubercle bacilli into the skin of an individual who, up to the time of inoculation, had been free from tuberculosis. Such an entrance of the tubercle bacilli has been so definitely shown in certain cases as almost to fulfil the conditions of an experiment. Thus a vaccination mark, a tattoo mark, or the wound made in piercing an ear for earrings has been infected with the saliva of a tuberculous individual, and lupus has followed in the scar. Single lupus nodules have in many cases developed on the face, arms, and ears in this manner. Again, lesions of the mucous membrane due to rhinitis or eczema of the nasal orifice have often served as the point of entry of the tubercle bacillus, with resulting lupus. Primary lupus again occurs from time to time in the form of lupus verrucosus or tuberculosis verrucosa cutis on the hands of post-mortem porters, butchers, cooks, kitchenmaids, and others whose work directly exposes them to infection. In these

cases the tuberculous infection may remain strictly localised or may get into the lymph or blood stream and after a longer or shorter interval give rise to general tuberculosis.

Secondary lupus may either develop through the lymph stream or the blood stream or directly from an underlying tuberculous focus with or without a communicating sinus. When development takes place through the blood stream the foci may resemble an exanthem and be disseminated in the skin, numerous foci appearing simultaneously and developing synchronously.

That lupus vulgaris is really a cutaneous tuberculosis there can be no doubt. This is conclusively proved by the histological examination of the lesions and the demonstration of tubercle bacilli in them and the pure cultures of tubercle which can be obtained from them, as also by the inoculation of guinea-pigs with the tissue of lupus foci leading to the development of general tuberculosis in the inoculated animals. It usually begins in children or young people, often on the face, as small nodules in the deeper part of the corium. These are soft in consistence, of the ordinary granulomatous structure, and of a semi-translucent appearance. The nodules increase in number and size, coalesce to form a dull red patch which is raised above the level of the adjacent skin, has an infiltrated edge, and becomes scaly on the surface. The nodules and patches sooner or later break down and ulcerate, or they may undergo involution, absorption, and atrophy. When ulcers have formed they remain as such for months, then they show a tendency to heal with formation of fibrous or cicatricial tissue, in which further nodules may develop later, causing it to break down again. Extension proceeds by the appearance of fresh nodules at the margin, which in their turn undergo ulceration, until considerable areas have become involved. The ulceration may even extend quite deeply, leading to the destruction of the cartilages and consequent great deformity.

Lupus is most common on the face, and may involve the eyelids, leading to ectropion, and simultaneously attack the conjunctiva. The nose is generally involved secondarily to the nasal mucous membrane, and from the nose the lupus may spread more or less symmetrically into both cheeks, giving an appearance like lupus erythematosus, and either remaining superficial or taking on the form of lupus serpiginosus. The alæ nasi may become hypertrophied and the nasal orifice almost closed, while the nasal cartilage is frequently involved. The larynx, the gums, and the pharynx are attacked sometimes, and especially in the former case is the disease of serious import to the patient.

Epithelioma may supervene on lupus vulgaris, and one case has been recorded in which it made its appearance as early as the age of nine.

The differential diagnosis is sometimes difficult, especially from syphilis. The history may be of assistance in making the distinction, but a careful examination of the anatomical character of the lesions should be a sufficient guide. In lupus there are small yellowish-brown nodules in the skin, from which the blood may be expressed and which on diascopic examination appear of a brownish tint. These nodules are in the case of lupus soft to the touch and permit of a probe being forced into them. In syphilis, on the other hand, the nodules are distinctly hard and infiltrated, will not permit the insertion of a probe, and diascopy does not show the same brownish pigmentation that is present in lupus. Syphilitic ulcers have a more serpiginous and clean-cut edge than lupus ulcers; the base of the syphilitic ulcer is of a more necrotic and leathery character; the syphilitic scar is harder and remains free from the nodules which are present in the lupus scar. Lupus ulceration is slow, with irregular, smoothish edge; the base is covered with clean, coarse granulations, which easily bleed. The scar is fine and somewhat wanting in sensibility and contains nodules of definite lupus character. Of course, the two diseases may co-exist, but in cases of doubt the reaction or want of reaction to antisyphilitic remedies may finally clear up the diagnosis. In lupus of the mucous membranes the disease remains more superficial than in syphilis, deeper cartilaginous and bony structures have less tendency to be attacked, the edge of the ulcer has a level, non-infiltrated appearance, and in its neighbourhood are characteristic reddish-brown nodules, while the syphilitic ulcer speedily involves deeper structures, has a definite infiltrated raised edge, and speedily responds to mercurial treatment.

From lupus erythematosus the diagnosis may be made by the absence of ulceration in the latter, the later age at which lupus erythematosus commences, its early symmetry, and the common involvement of scalp and ears. In lupus vulgaris, on the other hand, there may be a symmetrical arrangement of the lesions in later stages of the disease but not at its onset.

From epithelioma and rodent ulcer the diagnosis is easy and can usually be made from the later age at which these two diseases make their appearance, quite apart from the clinical differences.

The treatment of lupus vulgaris must depend to a large extent on the size and position of the lesion. Where the lupus patch is from one-fourth to one inch in diameter it can easily be removed, more especially if it is situated on the non-exposed portions of the body. There is no question that excision is the best possible treatment. The operation is a simple one, the result is excellent, the scar is small, the period of treatment is minimal, and a general anæsthetic unnecessary. The infiltration method produces a quite satisfactory anæsthesia, the edges of the wound can be brought together with a few stitches, and if the removal has been radical there is no recurrence. Such an operation is, of course, inadvisable where the excision of the lupus patch leads to displacement of surrounding structures, causing disfigurement, as, for instance, of an eyelid causing ectropion, or when the lupus lesion is much beyond the size described above. In some such cases excision is still possible, but instead of bringing the edges of the wound together a skin graft must be applied. This graft must be carefully measured, so that after shrinking it will exactly fill the space from which the lupus has been excised. The graft must be taken from a suitable part of the body and must consist of epidermis and dermis excised as deep as the fat layer and applied as rapidly as possible to the area from which the lupus patch has been removed. In ten days, under a simple gauze dressing, the wound will have completely healed, and after a few weeks the cosmetic result will be extremely good. In some extensive cases it is advisable to apply a graft which still remains attached to its original position by a pedicle conveying a sufficient blood-supply, which pedicle is cut through after the graft has taken. Such grafts can, of course, only be cut from a few positions, such as the arm, but are invaluable when it is required to reconstruct a nose or a lip. Thiersch grafts—i.e., grafts shaved very thin with a razor from the superficial layers of the epidermis—may also be used in certain cases with advantage, and I have seen most admirable results obtained by their use. They cannot, however, be employed to fill up a cavity, and when the excision of the lupus has been very thorough and deep these particular grafts are not suitable.

A less radical, and therefore less satisfactory, method of treatment is scraping. One or two small patches of lupus on the limbs or trunk can be removed by a thorough application of the sharp spoon, and here again a general anæsthetic is seldom necessary. The scraping should be followed by the application of pure carbolic acid or the actual cautery to the wound, in order to destroy any lupus tissue which may have escaped the sharp spoon, and then the chance of recurrence will be small. But if any tuberculous tissue or encapsulated bacilli are by inadvertence left behind, it is only a matter of time as to when recurrence will show itself. And this is the great danger when methods such as scarification or the application of caustics are adopted. Scarification consists in destroying the lupus tissue by a knife fitted with numerous parallel blades. Caustics like zinc chloride and pure nitric acid destroy all the tissues with which they come into contact; others like pyrogallic acid and arsenic are said to have a selective action on tuberculous tissue, but in any case their penetrating power is slight and fibrous tissue surrounding tuberculous foci is very apt to escape their attack, thus giving great probability of future recurrence. Perhaps the best of such applications is a plaster or ointment containing 10 to 25 per cent. of pyrogallic acid, or a 20 to 25 per cent. solution of resorcin applied on gauze and renewed every six hours for four or five days. At the end of this time the resorcin will have set up an acute inflammatory reaction, which must be soothed by applications of boric ointment, and the resorcin application then renewed. A paste which is very commonly employed is one containing 20 grains of

arsenious acid to the ounce of lard or lanolin, applied night and morning for three days. The whole area so treated swells up and a superficial slough forms, and separates, causing the destruction of the diseased tissues. But so much pain is caused that it is often necessary to give morphia, and even if morphia or some anæsthetic, such as orthoform, be mixed with the original paste the pain is, nevertheless, sufficiently great, in my opinion, to prohibit this method of treatment. Very small nodules can be well treated by inserting sharp-pointed wooden probes soaked in acid nitrate of mercury or in 40 per cent. carbolic acid. In the latter case the wooden spicules are allowed to soak for two days before insertion; they are pushed rapidly into the lupus nodules, the projecting ends are cut off and a piece of carbolic plaster is applied over them for two or three days. When it is removed the wooden spicules are found lying loosely in the lupus tissue, the inflammatory reaction of which is quieted by zinc ointment or plaster. The chief danger in this method is the overlooking or incomplete destruction of some of the lupus tissue, with the possibility of subsequent recurrence of the disease. When excision is impracticable and caustics are considered inadvisable, the lupus tissue can often be satisfactorily destroyed by the Paquelin cautery or hot-air applications. In the latter method air is passed through a metal tube heated by a Bunsen burner on to the diseased tissue, the air having attained a temperature of 250°–300° C. The diseased surface becomes pale and blanched, and it is dangerous to carry the reaction beyond this stage, otherwise lupus tissue and healthy tissue become irrevocably destroyed and very considerable scarring results. The method is of service only in practised hands, and is very painful, not only at the time of employment, necessitating a general anæsthetic, but also afterwards. Healing takes place by granulation, and the resulting scar is not unsightly if a correct application has been made.

The question of the scar is a most important one when the disease has involved the neck or face. In these cases the cure of the lupus is, of course, the first consideration, but in women especially the appearance of the resulting scar may make all the difference whether they can earn their living in service or not or, if unsightly, seriously compromise their chances of marriage. I have already said that for lupus of non-exposed parts excision, if possible, is by far the best treatment. A small linear scar, if skilfully placed, may also cause little disfigurement on the face, and even a good graft may give a satisfactory cosmetic result, but the scars caused by caustics and the cautery often leave much to be desired. Apart from the want of suppleness the colour of the scar is frequently different from that of the surrounding healthy skin, and therefore unpleasantly noticeable. To a certain extent this can be got over by tattooing the dull white skin graft with a suitable pigment, but the operation is not an easy one.

It becomes, therefore, necessary to seek a method which gives a more supple and natural scar. Such a method we have in Finsen light treatment, which consists essentially in focussing the chemical rays of sunlight or electric arc light on the diseased tissue, which has been rendered anæmic by pressure. The orange and red rays, or heat rays, are excluded by passing the light through a filter containing a solution of copper sulphate, or a stream of cold water, while the violet and ultra-violet rays pass through and are concentrated on the lupus patch, from the superficial vessels of which the red blood corpuscles have been removed by pressure. The patient experiences no discomfort at the time of treatment, even if it be continued for an hour or more at each sitting. The treatment is followed after each application by a reaction, which, when repeated sufficiently, often has a beneficial action on the lupus, leading to its cure and the formation of a soft, thin, and supple scar. The cosmetic results thus obtained are undoubtedly excellent in lupus of the face, and when the patient is wealthy and has plenty of time at his disposal this method of treatment is highly to be recommended for lupus of the face or neck. But lupus patients do not often come into the above category, and it has then to be remembered that the Finsen treatment is very slow, occupies a great amount of time, and requires a vast amount of patience both on the part of the operator and the patient.

When a sufficient quantity of radium is available, most excellent results can be obtained from the application of the pure salt for the comparatively short periods of an hour on successive days until a reaction has been obtained, and subsequent applications when this reaction has been recovered from. By the use of a thin aluminium screen the effect of the more penetrating rays alone can be employed and more deeply-seated nodules treated, but the exposure must then be longer. I have myself got very good results by using a less active specimen of radium sulphate spread on linen with the varnish used by the Radium Institute in Paris, and applied for 24 hours consecutively. The radium must be covered with thin india-rubber tissue to protect it from moisture, or its activity is seriously impaired for some time. The resulting scar is supple and very good.

A third method of radio-therapeutic treatment is by means of the X rays, and this is more rapid than the preceding. The results are also very satisfactory, and not only can the lupus be cured but an excellent scar obtained. The method is, however, somewhat tedious, and numerous exposures to the rays are necessary, leading in some cases to the appearance of abundant telangiectasis round the diseased patch, and consequently excessive prominence of the white scar. X ray ulcers have also been known to develop and cause considerable trouble, but if these dangers are avoided, and the experienced operator need not fear them, the final results are good, and little inferior to those obtained by the Finsen method.

The results both of the Finsen treatment and of the X rays in lupus appear to me to be due to the inflammatory hyperæmia induced rather than to any selective action on the bacilli which are causing the disease, and it is well to bear in mind that radio-therapeutics are not the only method of treating lupus vulgaris, and that recurrence has occurred even when the disease has been apparently cured by actinic treatment. In cases where the tendency to recurrence is great and in many other cases of lupus vulgaris the so-called "opsonic treatment" gives most excellent results. The method is somewhat complicated and has been described at length by me in THE LANCET,[1] and cases treated successfully by this method were reported by Pernet and myself in 1906.[2] In two cases I have used liquid air with considerable success.

But whatever the local treatment adopted for any particular case of lupus, and the choice of the most suitable method of treatment will depend largely on the experience and skill of the dermatologist, the general health of the patient must also be treated, and the tendency to tuberculosis, of which the disease is evidence, combated as energetically as possible.

Lupus verrucosus presents some differences from lupus vulgaris in that it is the form of tuberculosis seen in butchers, post-mortem porters, pathologists, and others who directly inoculate their hands from a tuberculous body. The lesions are nodular, crusted, sometimes markedly hypertrophic, usually single, rarely multiple. On removing the crust pus may sometimes be squeezed out. The typical soft, reddish-brown nodules of lupus vulgaris are entirely absent, the lesions being essentially firm and hard. The disease is very chronic and may persist for years, but patients appear to be prone to develop tuberculosis elsewhere as well.

Tuberculous ulcers, tuberculous gummata, suppurating and vegetating tuberculous disease of the skin are of interest chiefly from the point of view of diagnosis, and this can usually be cleared up by the estimation of the opsonic index and determining the results of injection of tuberculin or by histological examination and the inoculation of a guinea-pig.

The tuberculides are characterised by successive eruptions of lesions, at first either papular or nodular, more or less deep, of slow growth, sometimes becoming pustular, or ulcerating and healing with the formation of a cicatricial scar. They may be lichenoid, as in lichen scrofulosorum; papular, as folliclis and acnitis; acneiform, as in acne cachecticorum; or erythemato-atrophic, as lupus erythematosus.

The tuberculides occur, as a rule, in individuals who are suffering from some form of tuberculosis. This rarely takes the form of phthisis but is more commonly a slowing developing form of tuberculosis often of the glands or bones or joints, that is to say, some variety of tuberculosis which is seldom fatal but rather capable of cure.

[1] THE LANCET, Jan. 19th (p. 144) and March 23rd (p. 803), 1907.
[2] British Journal of Dermatology, October, November, and December, 1906.

Microscopic examination of these lesions sometimes shows giant cells in considerable numbers and lymphoid and epithelioid cells having a tendency to caseous degeneration. Such are the appearances in lichen scrofulosorum and acnitis. In lupus erythematosus, on the other hand, and in folliclis the lesions are found to consist of columns of round cells encircling the dilated vessels of the derma. Such lesions do not contain the tubercle bacillus, and inoculation of the guinea-pig seldom gives a positive result except in the case of lichen scrofulosorum and one recorded case of erythema induratum.

I do not at present intend to deal with the tuberculides in detail, either from the point of view of clinical characteristics, differential diagnosis, or treatment. I would merely mention that the general treatment is that usually adopted in tuberculosis, including, of course, the use of tuberculin controlled by estimation of the opsonic index, and the local treatment is that best suited to the local lesions, whether they be those of lichen scrofulosorum, Bazin's disease, lupus erythematosus, or other tuberculide. In connexion with lupus erythematosus I would, however, call attention to the excellent results obtained in different cases of ionisation, radium, solid carbonic oxide, and liquid air. Only recently I had the pleasure of demonstrating to some of you the successful results both of the use of liquid air and ionisation.

A CASE OF PONTINE TUMOUR PRODUCING DISSOCIATED HEMIANÆSTHESIA.

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THE following case deserves to be placed on record for two reasons. First, it is, so far as we know, the only case yet published in which hemianalgesia and hemithermo-anæsthesia were produced by a tumour, while the sense of touch was preserved (dissociated hemianæsthesia); secondly, it carries the localisation of the track of sensations of pain and of heat higher up the central nervous system than has yet been reached.

A man, aged 36 years, a gardener, was admitted on Dec. 10th, 1908, and died on April 21st, 1909. His father and mother were each alive, and over 70 years of age. He had been married for several years, but had had no children. He had had a sore on the penis seven months ago, but no secondary symptoms. He was treated by iodide of potassium and mercury, pushed to salivation, but fruitlessly. One year ago he had been treated for neuralgia. Six months ago he had begun to attend in the out-patient department for left facial paralysis. He then swayed when standing and had unequal pupils and diplopia. As he did not improve he was admitted.

While in the ward the patient had: (1) persistent occipital headache; (2) repeated vomiting; and (3) the following localising symptoms:—

A. *Sensory.*—Tactile sensation was preserved everywhere, except upon the left side of the face and on the mucous membranes of the mouth and nose. These will be described separately. The superficial sensation of pain (pin-prick) was entirely lost over the whole of the right half of the body from the crown of the head to the sole of the foot (Fig. 1), with the exception of the penis and scrotum and a small area round the anus. Here a pin-prick was felt naturally. A small area round each of these parts showed relative analgesia. The deep sensation of pain was apparently also lost upon the same side, for pressure which produced pain upon the left half of the body and on the left limbs produced no pain upon the right. The vibrations of a tuning fork were either not felt at all on the right side, as at the knee and on the crest of the ilium, or were felt less or for a shorter time than on the left side. The sensation of heat was completely lost and that of cold was only recognised as producing a stinging pain over the whole of the right side, with the exception that on the scrotum and penis the extremes of heat and cold were distinguished as hot and cold (Fig. 2). The sense of position of the limbs was natural.

B. *The sensory condition of the face and mouth* was peculiar. It was explained by a second tumour which had not been suspected during life. Tactile sensation was lost over the left face and cheek from the eyebrow to below the mouth and was weak over the forehead, temple, and lower jaw. The sense of pain and the thermal sense were preserved over these areas. The mucous membranes of the nose, cheek, palate, tongue, and lips were anæsthetic on the left side, but not on the right, to the touch of cotton-wool. Of the mucous membrane of the cheeks and lips the left side was analgesic though the skin on the left cheek felt pain, while the right side felt pain though the skin of the right cheek did not. There was anæsthesia to cold on the dorsum and on the under surface of the left half of the tongue, but anæsthesia to heat was complete over the whole dorsum and partial over the whole of the under surface. Cold was felt inside both cheeks and on both lips, but heat was not felt inside either cheek and was delayed on the lips.

C. *Motor.*—Equilibrium was lost. The patient swayed greatly when standing or walking. There was weakness of the left sixth nerve and diplopia was produced by looking

FIG. 1.

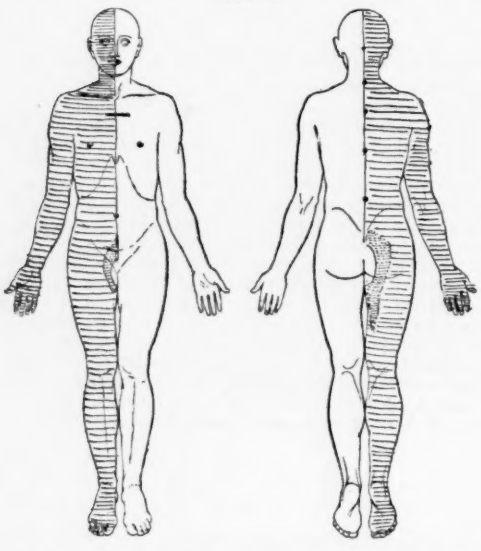
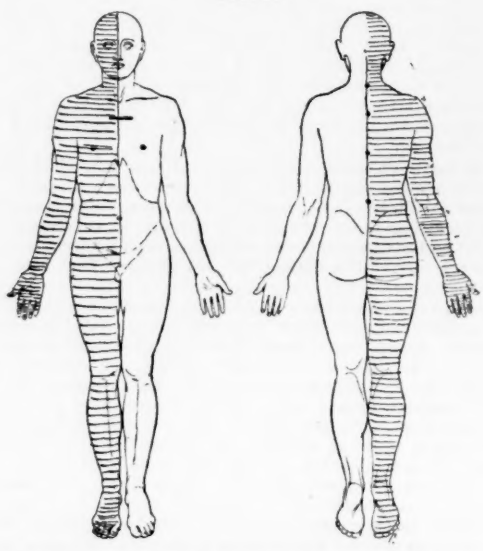


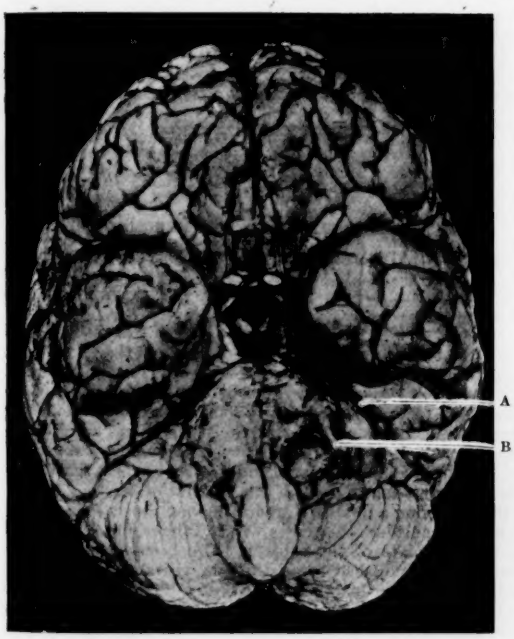
FIG. 2.



to the left. There was nystagmus in every direction except downwards. The right pupil was always larger than the left, but each pupil reacted naturally to light and to accommodation. There was some weakness of the left external pterygoid, none of the masseter. There was slight weakness of the facial muscles on the left side of the mouth. The eye closed naturally and the frontalis also acted naturally. The tongue was protruded straight; swallowing and speech were natural; the palate and the vocal cords moved equally and well (Mr. W. D. Harmer's report). There was no muscular wasting. The power of the right arm and leg was equal to that of the left, and when lying in bed coördination was natural on both sides. The right knee-jerk was the greater; there were ankle clonus and extensor response of the great toe on the right side.

D. *Special senses.*—Vision was natural with each eye separately. The fields were not contracted. The optic discs had been several times examined and had been found natural. On April 13th the note is as follows—Right eye: optic disc blurred and swollen; vessels obscured; large hæmorrhage on inner side. Left eye: optic disc swollen, less so than right; small hæmorrhages round it. Hearing was bad. A watch was not heard beyond 8 inches from the right ear and 4 inches from the left. But in this ear the membranes were normal and bone conduction was unimpaired (Mr. C. E. West's report). Taste was lost over the left half of the tongue.

FIG. 3.



Reproduction of photograph of the base of the brain showing tumour, B, lying on the left lateral aspect of the pons. The left fifth cranial nerve, A, is seen projecting from the cystic part of the growth.

Several cases have been recorded of late years in which dissociated hemianæsthesia has been due to softening in the lateral region of the medulla, produced, in the cases which were examined after death, by thromboses of the posterior inferior cerebellar artery. References are given by Dr. Kinnier Wilson, to whose paper we refer below. These cases have, however, differed from ours in that the functions of the pharynx and larynx have been involved. The absence of these symptoms in our case led us to localise the lesion at a rather higher level. The severe occipital pain and the constant vomiting led us to suspect that the disease was tumour rather than softening, and this diagnosis was confirmed by the eventual appearance in April of double optic neuritis.

The patient went downhill steadily, and eventually died. When the brain was removed post mortem a rounded growth was seen occupying the position of the sella turcica, but not infiltrating the brain in any way, though its posterior part was to some extent compressing the ventral aspect of the pons. A second tumour, partly solid and partly cystic, was also observed, apparently embedded in the left lateral aspect of the pons.

The first tumour.—The sella turcica was removed entire and the mass lying in its centre was found to be composed of a tumour which was growing from the nasal mucous membrane. This had infiltrated through the bone and projected as described within the cranial cavity. It was roughly circular, measuring three centimetres in diameter. It was of a dark red colour and contained a certain amount of viscid fluid. Microscopically it was a myxo-sarcoma.

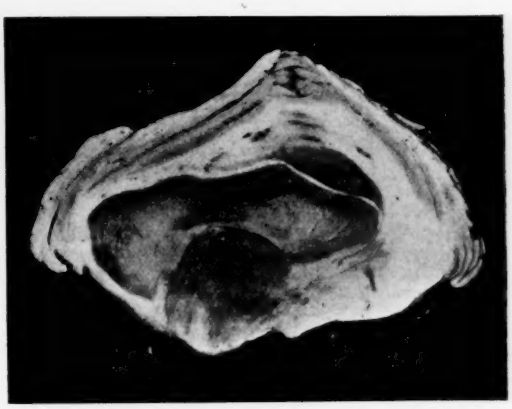
As regards the intracranial relation of this tumour, it in

FIG. 4.

The commencement of the cystic portion of the tumour within the fourth ventricle is seen. The striæ acousticæ are seen just below the cyst. Section viewed from below.

no way infiltrated the brain, but, as stated above, had somewhat compressed the pons posteriorly; anteriorly it reached the pituitary gland and infundibulum, but these were lying quite distinct from the growth and showed no sign of disease. The chiasma and optic tracts were not involved in any way. Of the cranial nerves the tumour had involved the right fifth, which was spread out and flattened to a considerable extent over the right side of the growth. The left sixth nerve passed through the dura mater just at the edge of the tumour, and appeared to be partly involved in it.

FIG. 5.



Shows the tumour lying in the middle peduncle and involving the left lateral aspect of the pons. The cyst in connexion with it is seen almost completely filling up and dilating the fourth ventricle. A match has been introduced into the Sylvian aqueduct. Section viewed from below.

The second tumour.—This lay apparently in the left cerebello-pontine angle in the position of the inferior and middle peduncles. The surface of the tumour was smooth and covered with pia mater—in part it felt hard and in part was evidently cystic, the latter portion forming the anterior and lateral part of the tumour as it lay *in situ* (*vide* Fig. 3). Through the lateral aspect of the growth, which

here was cystic, the left fifth cranial nerve emerged. The solid part of the tumour compressed the left seventh and eighth cranial nerves and exercised some pressure, though less, on the ninth, tenth, and eleventh. The sixth and twelfth nerves were not involved.

The brain stem was divided just below the posterior corpora quadrigemina and parallel sections were made through the pons and medulla. The tumour was then seen to be growing from the left side of the pons and to have a single large cyst in connexion with it. The solid part of the tumour lay on the left lateral aspect of the pons, and though it compressed the upper part of the medulla and olive of the left side it did not infiltrate them at all. The solid part of the growth formed a projection within the dilated cavity of the fourth ventricle, and extended throughout the inferior two-thirds of the pons. The cystic part of the tumour filled the cavity of the fourth ventricle completely and commencing below at the level of the striæ acousticæ extended as far up as the commencement of the iter. The left superior cerebellar peduncle lay spread out on the surface of the cyst and the middle peduncle passed through its cavity in part and partly over the ventro-lateral surface of the tumour.

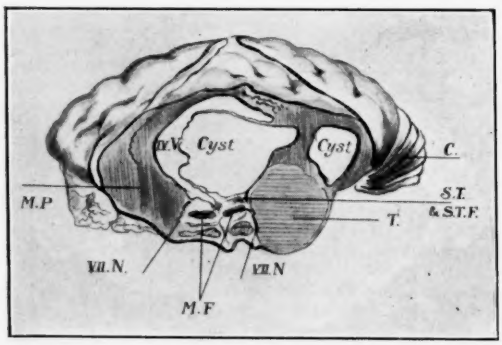
Sections were made throughout the whole spinal cord and brain stem and examined by the Marchi, Weigert-Pal, and hæmatoxylin and Van Giessen methods.

Hæmatoxylin and Van Giessen.—The tumour was found to be a glioma, which, however, was fairly circumscribed and did not infiltrate the surrounding parts to any extent.

Marchi method.—Spinal cord. There was no degeneration. Medulla: some degeneration in the intra-medullary fibres of the ninth, tenth, eleventh, and twelfth nerves, though not to any great extent. Throughout the medulla a fine diffuse degeneration was seen. There was, however, no clearly defined tract degeneration and no definite degeneration of the spinal root of the fifth nerve on either side. Throughout the pons, mid-brain, subthalamic region and the basal ganglia a diffuse degeneration was present. This, however, did not affect the pyramidal fibres to any extent, but was best seen in the fibres of the tegmentum and in the peduncles of the cerebellum. It was not more marked on one side than on the other, except that the fibres of the left middle peduncle were largely degenerated.

Weigert-Pal method.—Sections were made through the tumour and cerebellum, and they illustrate very well the relationship of these. The semi-diagrammatic drawing (Fig. 6) is from one of these sections. They showed very

FIG. 6.



Semi-diagrammatic drawing from a Weigert-Pal preparation showing the tumour and its relations at the level of the seventh cranial nerves. C, Cerebellum. M.P., Middle peduncle. M.F., Mesial fillet. T., Tumour. S.T., Spino-tectal fibres. S.T.F., Spino-thalamic fibres.

well the degeneration in the left middle peduncle. The cyst was found to be divided in one plane into a larger central and a smaller outer part by surviving fibres of this peduncle.

We must now see how far the clinical symptoms can be correlated with the pathological findings. The curious sensory disturbances in the areas of the right and left fifth cranial nerves are to be explained by the fact that both nerves were implicated by the two tumours, though in neither case was their degeneration, as judged from the methods employed, very extensive.

With regard to the crossed dissociated hemianalgesia and hemi-thermanæsthesia, clinical observation has established the fact that the fibres carrying afferent impulses of thermal or painful type, cross very soon after entering the spinal cord and ascend in the antero-lateral columns. In this position there ascends the tract of Gowers, which is probably also a crossed tract, though this has not been definitely accepted.[1] Gowers's tract can be divided into three long afferent paths—the ventral spino-cerebellar, spino-thalamic, and spino-tectal. Of these, the two latter reach as far as the thalamus and the upper part of the mid-brain, as their name implies. It would seem probable that these at all events constitute a path by which impulses of the kind we are considering may travel, though no doubt there are secondary paths formed by short relays, but these, too, probably lie in the lateral columns of the cord. The lesion produced in thrombosis of the posterior inferior cerebellar artery, which gives rise to symptoms somewhat analogous to those seen in our case, involves an area in the medulla through which the fibres under consideration run.[2] Our case would seem to afford further confirmatory evidence of the function of these fibres, for owing to the position of the pontine tumour they must have been seriously involved, although unfortunately we could not demonstrate that they were affected out of proportion to other tegmental fibres in the pons.[3] However, tumours are notoriously unsatisfactory lesions on which to base conclusions, either as to anatomical distribution or physiological function, and we can only urge the probability of the view which we have advanced.

The case shows, at all events, that in the pons, as in the medulla, the fibres carrying impulses of pain, heat, and cold are still distinct from those carrying tactile sensations.

ACUTE PRIMARY PHLEGMONOUS GASTRITIS:

NOTES OF A CASE DUE TO THE PNEUMOCOCCUS.

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OWING to the rarity of this condition, and the exceptional opportunities afforded by the following case for microscopical and bacteriological investigation, it has seemed desirable to place it on record together with some account of previously described instances of this lesion. My case was admitted to St. Thomas's Hospital in February, 1909, under the care of Dr. Hector W. G. Mackenzie, and to him my best thanks are due for permission to publish this account of it.

Before giving a detailed description of the case it will be as well to consider other cases which I have found collected in the literature of the subject. The best account of the disease was published some thirteen years ago by Leith,* and, while further instances have been added since this date, no better clinical or pathological description is to be found. The larger text-books of medicine contain brief descriptions of the disease in accordance with its rarity, and they speak of a circumscribed and a diffuse form, and it is this confusion between what should be termed "abscess of the stomach wall" and the true phlegmonous inflammation of its wall that makes it difficult to ascertain exactly how many cases of the latter disease have been recorded. There is little difficulty in differentiating between "abscess" and "cellulitis" in the subcutaneous tissues, and it is to be hoped that future cases will be classified with greater accuracy. Again, not sufficient stress has been laid on the occurrence of "primary" and "secondary" inflammations of the stomach wall, and a number of the cases of phlegmonous gastritis in the literature were secondary to gastric ulcer or carcinoma, or operations

[1] Page May: The Afferent Path, Brain, vol. xxix., p. 742.

[2] See Kinnier Wilson, Proceedings of the Royal Society of Medicine, vol. ii., Neurological Section, p. 52, for account of a case and bibliography.

[3] The spino-thalamic and spino-tectal fibres which lay at the mesial edge of the tumour would at all events be more directly exposed to œdema or other vascular disturbance than the fibres of the mesial fillet which lay more remote and quite free from the growth.

* Edinburgh Hospital Reports, vol. iv., 1896.

on the stomach, and should therefore be termed "secondary" phlegmonous gastritis. By acute primary phlegmonous gastritis, therefore, we should understand a diffuse inflammation of the gastric wall for which no cause, other than a bacterial infection, can be assigned. The infiltration of the stomach wall affects all the coats, but the main incidence is in the submucosa, and here there is usually a layer of thick pus, often macroscopical as well as microscopical.

Leith, up to 1896, collected 43 cases of diffuse inflammation of the stomach wall, and it may be well to reconsider the essential details of his, the forty-fourth, case.

The patient was a well-developed man of 49. He had enjoyed excellent previous health, but was very irregular as to the time of his meals, sometimes going from early morning till late at night without food. After these long fasts he was accustomed to overload his stomach. He was very temperate in drinking. The illness began with a feeling of malaise for 24 hours. On the second day the patient vomited, bringing up a quantity of whitish fluid containing mucus and granules of solid matter but no pus; he then experienced nausea, but very little pain. On the third day he was awakened by gastric pain, with nausea, followed by vomiting, at first of mucus, as before, and shortly afterwards the vomit was tinged with bile. The vomiting became more frequent, and the patient suffered from severe pain in the left side of the abdomen.

The man's condition four days after the onset of the illness was as follows: Face anxious and shrunken; frontal headache; very restless, with slight delirium; slight general sweating; tongue dry and covered with dirty white fur; temperature 101° F., pulse 110, full and rather tense. There had been no action of the bowels for two days, but there was no general abdominal pain. The patient complained of severe pain in the region of the stomach, aggravated by pressure or the lightest percussion. There was no sign of distension of the stomach, and the rest of the abdomen could be palpated without causing discomfort. Poultices were applied over the epigastrium, and a mixture containing bismuth and hydrocyanic acid was given internally.

On the sixth day of the illness the vomiting had become less frequent, but the epigastric pain and tenderness persisted, and had spread also to the right iliac fossa and the left hypochondrium. The temperature was 102°, and the pulse 86, full and not thready. The patient was very restless but quite conscious. An enema containing turpentine in soap and water was given, but no action of the bowels resulted. The next day there was general distension of the abdomen; a diagnosis of general peritonitis was made, and abdominal exploration was carried out. The visceral peritoneum was noticeably injected, and the coils of bowel were covered with a little sticky lymph; this condition was most marked in the right iliac fossa. The appendix was removed, but found to be normal. No cause for the peritoneal infection could be discovered, and the operator contented himself with lavage and closure of the abdominal cavity. The patient died seven hours after the operation.

Necropsy.—A post-mortem examination was made 14 hours after death. The peritoneal cavity contained about three ounces of blood-stained serum but no pus, the serous coat of the small intestine was intensely injected, and the coils were stuck together by a little lymph. As the stomach was reached there was slight increase of the inflammation, and, at a point an inch and a half from the pylorus on the lesser curvature, there was an area of diseased stomach wall, the size of a sixpence, covered with a thin layer of purulent lymph; the serous coat beneath was injected, and this inflammation appeared to be older than the rest of the peritonitis. Section of the stomach revealed a greatly swollen mucous membrane with a little adherent mucus; there were no ridges on its surface and the colour was pale for the most part. A few small excoriations were exhibited near the pylorus. The submucosa was everywhere thickened, and measured from three-eighths to half an inch in depth all round the circumference for two to three inches on the gastric side of the pylorus. Its thickness lessened as the œsophageal orifice was reached. Dead white in colour, firm and solid; no fluid exuded on pressure. The change was accurately limited by the pyloric ring, and the duodenum was normal. There was no sign of perforation of the stomach wall. There was some injection of the serous coat; most marked in the region of the patch mentioned above. The glands along the lesser curvature of the stomach were a little swollen and injected. The mucous membrane of the small bowel was slightly swollen and injected in those parts where the serous coat was most inflamed. All the other organs, thoracic and abdominal, were healthy.

Leith's description of the microscopical appearance of the stomach wall is as follows:—

Submucous coat.—Infiltrated almost everywhere with small round cells, obscuring other structure. Where the infiltration was less dense the round cells lay deeply placed close to the muscular layers. No red blood corpuscles seen, but abundant fibrin. Blood-vessels of muscularis mucosæ dilated.

Mucous coat.—Infiltration with round cells between the gland tubes in many areas, reaching the surface in some situations, where exudation of a fibrinous character was in evidence, with a few red cells. Blood-vessels considerably dilated. Muscularis mucosæ stained well though a little swollen in parts.

Muscular coat.—Small masses of round cells found between the muscle bundles, reaching just to the serous coat. Muscle fibres not altered.

Serous coat.—Unaltered for the most part; at the situation of the fibrinous patch revealed at the necropsy it showed well-marked fibrinous inflammatory exudation.

Résumé.—Microscopy revealed no evidence of previous gastric inflammation, but only recent inflammatory changes. Multinuclear cells were the infiltrating leucocytes for the most part.

Bacteriology.—Films and sections showed large numbers of streptococci, separate cocci, and several groups of staphylococci. All stained well by Gram's method. Most abundant in submucosa, and mainly extra-cellular, but occasionally within the leucocytes. A few in the mucous coat, and in the serous coat in the neighbourhood of the lymph patch. Films from peritoneal surface of intestines showed the same organisms. No bacilli seen. Cultures not obtained.

It will thus be seen that Leith's case comes well within the definition of acute primary phlegmonous gastritis, since there was no other lesion of the stomach present, nor could the inflammation be ascribed to metastasis, as has occurred in some cases of pyæmia, usually of puerperal origin. It is a pity that the bacteriology rests on the microscopical findings alone, and, as will be seen, this applies to the majority of the cases described.

Since Leith's paper was published the number of recorded cases has increased twofold, so that Robson and Moynihan,[1] eight years later, were able to give clinical and pathological details of 85 cases. It is clear, however, that not all these were strictly primary phlegmonous gastritis, so that I will now describe my own case, which is complete in its pathological details, though the clinical history might have been fuller, if the nature of the lesion had been suspected before operation, and if the patient had been an adult instead of a young child.

Acute primary phlegmonous gastritis; pneumococcal peritonitis.—The patient, a girl, aged 13 years, was admitted on Feb. 16th, 1909. The family history was good. The previous history showed that the patient had always been a delicate child and had been brought up in very poor surroundings. When 16 months old the child was taken into Lambeth Infirmary for diarrhœa and vomiting. She remained there two and a half years, and during that period exhibited thrush and sores on the buttocks, and she also contracted measles. At the age of eight the child was admitted to Wandsworth Infirmary with bronchitis and pneumonia. In 1907 the girl was found to be suffering from a vaginal discharge which was of gonorrhœal origin. Since this time the mother had noticed that her child often complained of pain in the stomach and headache, and there had been progressive loss of weight. Vomiting had not been a common occurrence, and the bowels had acted with regularity.

The history of present illness is as follows. In the evening of Friday, Feb. 12th, after having felt quite well all day, the child was suddenly seized with acute abdominal pain, which was soon followed by vomiting. The vomit was coloured with bile, yellowish-green, and watery. The girl was put to bed, but she obtained no sleep, and a special feature of the case is that delirium set in on the first night. The symptoms of acute abdominal pain, vomiting very shortly after the ingestion of food, and restlessness, with attacks of delirium, continued up to the date of admission to the hospital, with no amelioration, on Feb. 16th. An aperient, liquorice powder, had been given on the 12th, but the bowels did not act until the 14th, when the stools were loose and offensive. It should be noted that the child was unable to localise her pain to either the upper or lower segments of the abdomen.

On examination the child looked extremely ill; her face was pale, with a flush on each cheek and sunken eyes with darkened rings beneath them. Her respirations were rapid and shallow, and she was very restless. The temperature was 100·8° F., the respirations were 30, and the pulse was 122. The tongue was dry and thickly furred. Abdominal respiratory movements were restricted to the upper segment. On palpation there were general tenderness and some rigidity, but this was most noticeable in the right ilia fossa and across the middle line to the left hypochondrium. In both flanks the abdominal wall was soft, though in this situation there was dulness on percussion. Elsewhere the percussion note was resonant, and there was no mass to be felt. Rectal examination revealed nothing abnormal. No peristalsis could be seen, or heard with the stethoscope. The thoracic viscera showed no physical signs of disease. The urine, drawn off by catheter, contained a trace of albumin and some mucus.

For this description I am indebted to Dr. J. F. Windsor, the house physician in charge of the case.

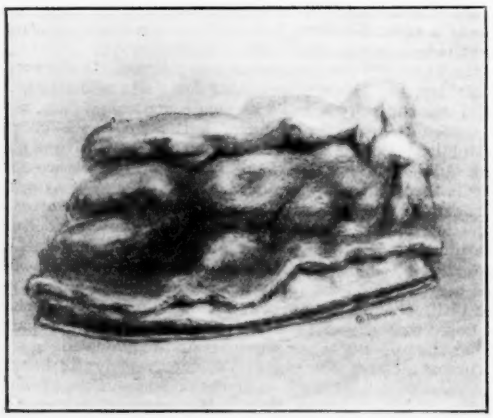
A not unreasonable diagnosis of general peritonitis, due to perforative appendicitis, was made, and immediate operation was decided upon. On opening the peritoneal cavity through a low right rectus incision a little turbid serо-purulent fluid escaped; this was not offensive, and examination of the appendix proved that this was not to be blamed for the condition. There was a little lymph on the coils of bowel examined, which were for the most part collapsed, and the fluid had collected in the pelvis where the Fallopian tubes were found to be healthy. As no assignable cause for the condition could be found through this incision, I opened the abdomen through the upper half of the right rectus close

[1] Diseases of the Stomach, Robson and Moynihan, 1904.

to the middle line, with a view to exploring the stomach. Here also there was a little fluid, but no lymph, and no sign of perforation of stomach or duodenum. The only noticeable feature was the extraordinary thickness of the stomach walls, which, when the viscus was drawn down into the wound, were fully one inch in thickness when held between the fingers; this condition was found to be present throughout the stomach, but it was much more noticeable in the pyloric half than towards the œsophageal opening; the thickening stopped short at the pylorus and the duodenum was normal. There was some injection of the serous coat of the stomach but there was no loss of peritoneal polish, nor were there any alterations in colour suggesting the presence of pus in the subserous tissue. In the absence of any other causative lesion the diagnosis of acute primary phlegmonous gastritis was made, and it was decided that little good could come of incising the stomach wall as the peritoneum was already infected; therefore some of the peritoneal fluid was collected in a sterile test-tube and the abdomen was closed, leaving only a drainage-tube into the pelvis. The condition of the patient at the end of the operation was grave, so that the abdomen had to be hastily sewn up.

After the operation the child was allowed brandy and water by the mouth, injections of strychnine were given, and an attempt at continuous rectal infusion with saline was made; this, however, was not retained owing to restlessness, and subcutaneous saline infusion was therefore substituted. There was some temporary improvement but this

FIG. 1.



Pyloric end of the stomach enlarged about one-third.

was not maintained, and though the temperature was normal on the third day and vomiting became less frequent, yet restlessness and mild delirium were constantly present and the pulse became more rapid and feeble. Death occurred four days after operation, and during this period there had been occasional vomiting of bilious material but no pus, and the child's bowels had not acted. Morphia had to be resorted to occasionally to keep the child from throwing herself out of bed.

The fluid removed at operation from the peritoneal cavity yielded a *pure culture of the pneumococcus*.

Within half an hour of the child's death the upper abdominal incision was reopened and the stomach was removed; cultures were then taken from the serous coat, the submucous layer, and the mucous membrane. The results of these cultivations will be indicated later. The appearance of the stomach, which is shown in Fig. 1 (reproduced from a coloured drawing executed within two hours of the patient's death by my friend Mr. G. Thornton), may be thus described:—

The *mucosa* was greatly swollen with well-marked ridges on its surface. In colour it was noticeably reddened with small areas of ecchymosis on the free surface of the thickened ridges. There was no pus or mucus seen upon its surface and no ulceration even of the size of a pin point which would have allowed exudation of pus from the submucous layer. The *submucosa* was thickened throughout, but not uniformly; the most evident changes occur as the section approaches the pylorus, seen to the right in Fig. 1. The colour is yellowish-white, with a little exudation of whitish fluid on pressure. It had the appearance of coagulated pus and had raised the mucous membrane from its bed and encroached considerably on the muscular coat, which in several regions was replaced by this dull yellowish-white infiltration. *Muscular coat:* where this was free from naked-eye invasion it was seen to be reddened and congested. The *serosa* showed no appreciable thickening, but some injection on its free surface.

The other organs showed very little change, with the exception of inflammatory lesions of the serous sacs. There

FIG. 2.

Section through the stomach wall showing greatly thickened submucosa consisting of fibrinous reticulum with masses of leucocytes. Leucocytic infiltration of the deep layers of the mucosa is also seen. 2-inch objective.

was general peritonitis, with injection of the serous coat of the bowel uniformly distributed, with some pus in the pelvis and around the liver, the right lobe of which was coated with lymph. There were a few old adhesions in the lower part of both pleural cavities, but these sacs contained no fluid. The surface of the right auricle exhibited three patches of recent pericarditis. These lesions may well be accounted for by a pneumococcal infection of the serous sacs.

FIG. 3.

Submucous coat showing fibrin and entangled leucocytes with diplococci scattered throughout the section. ⅛-inch objective.

Microscopy.—The *mucosa* was not much altered. In places, however, the intertubular spaces were densely packed with polynuclear neutrophiles. The *submucosa* was greatly thickened, consisting of a dense fibrinous reticulum with large numbers of polynuclear leucocytes entangled in the meshes. Small round cells were also present, but for the most part the cells were leucocytes, collected in a number of small clumps. Diplococci, staining by Gram's method, were abundant. The *muscular coat* exhibited leucocytic infiltration with some degeneration of the muscular bundles. The *serous coat* was very little altered. It was, however, noticeable that the number of diplococci seen in the sections were more numerous as one examined the microscopic field from mucous to serous coats.

Film preparations of the purulent fluid removed from the peritoneal cavity at the operation revealed the presence of numerous diplococci, mainly extra-cellular, but in some cases within the leucocytes. The microscopical appearances are well shown in Figs. 2 and 3.

Bacteriology.—From the peritoneal fluid the pneumococcus was obtained in pure culture. From the mucosa we obtained the colon bacillus and an atypical diplococcus, while from both the submucous and the serous coats pure cultures of a diplococcus, having all the characteristics of the pneumococcus, were obtained.

For the results of the microscopical and bacteriological investigation I am indebted to Mr. Dudgeon, the director of the St. Thomas's Hospital laboratories.

Of the 85 cases of which details are given by Robson and Moynihan, only 63 can properly be classed as instances of phlegmonous gastritis, and since 1904 not many cases have been added to the records. Huguenin[3] states that the number of described cases of the primary form is 70, and he then describes a case in a man, aged 73 years, who had a chronic pyloric ulcer, so that his case should not be added to the number of primary infiltrations of the submucous coat of the stomach. Another case, secondary to carcinomatous ulcer, is described by Lorenz Zeimnan,[4] who states that the diagnosis has only twice been made by exploratory operation. He also adds that a leucocytosis up to 30,000 has been found, and that herpes labialis and facialis have been noticed concurrently with this disease.

Cotterill,[5] in 1905, published a case which was undoubtedly one of primary phlegmonous inflammation. The patient was a man of 40 years, and a fortnight before his fatal illness he had consumed some foreign salmon which caused gastric pain and diarrhœa. From this attack he made a complete recovery, and after a day on the golf links, and shortly after a small breakfast, he experienced severe gastric pain and a sensation of having a heavy load on his stomach. He vomited a quantity of frothy fluid, was very thirsty, and very restless. Frequent emesis occurred and there were spasmodic pains in the stomach. The temperature on the second day was 103° F., pulse 120, and respirations 24. All these symptoms increased in severity the next day and the patient became cyanosed. The man's mind was fairly clear but he had no idea that he was so near to death. This occurred in coma two and a half days after the onset of his illness. At the necropsy the submucous coat of the stomach was found to be infiltrated with pus; the mucosa was congested and exhibited superficial petechial hæmorrhages. Microscopically there was leucocytic infiltration extending from the submucous layer to both mucous and muscular coats. The other organs were healthy. No bacteriology is described.

In 1906 Schnarrwyler[6] reviewed 83 cases which he had found in the literature, paying especial attention to the causes to which the onset of the disease was attributed. He also added 3 cases of his own, 1 secondary to carcinomatous ulcer at the pylorus, 1 secondary to puerperal infection with peritonitis, and 1 a primary phlegmonous gastritis. In this last case no cause save alcoholism could be discovered, apart from the infecting organism, which in all three cases was a streptococcus. More than three-fourths of Schnarrwyler's cases were described by continental writers, so that the number of cases occurring in this country is small, and, as shown by the accompanying table, where assignable causes are given for 46 out of the 83 cases, there were primary gross lesions of the stomach in 12 instances, and in several others the condition may be attributed to metastatic inflammation, a part of a systemic pyæmia.

Causation of Acute Phlegmonous Gastritis in 46 Cases (after Schnarrwyler).

Alcoholic excess	8	Ulcer of leg	1
Dietetic error	5	After gastro-enterostomy for carcinoma of pylorus	2
Chill	2	Gastrostomy	1
Food and drug poisoning	6	Chronic ulcer	4
Previous gastritis	1	Carcinoma	4
Trauma	2	Convalescence after typhus	1
Puerperal fever	2	Articular rheumatism	2
Pyæmia	2	Bronchiectasis	1
Ulcerative stomatitis	1		
Septic œsophagitis	1		

[3] Revue Médicale de la Suisse Romande, 1903, vol. xxiii., p. 727.
[4] Ein Beitrag zur Casuistik der Gastritis Phlegmonosae. Halle, 1904.
[5] Scottish Medical and Surgical Journal, vol. xvi., 1905, p. 236.
[6] Archiv für Verdauungs-Krankheiten, Band xii., 1906.

With regard to the organisms found in these cases a streptococcus is almost always to blame; in only a few cases have cultures been taken, but the microscopical evidence showed streptococci present in large numbers in 14 cases; in one a diplococcus[7] was also present. This was the case mentioned in the above table where an ulcer of the leg was regarded as the source of infection.

Before discussing further the causation of this interesting and unusual pathological condition it may be well to note some other authors who have described typical cases in recent years. Cayley[8] recorded an excellent example of the disease in a woman of 26, where death occurred from general purulent peritonitis. In this case cultures grew only the colon bacillus, while streptococci were present in film preparations. Hopkins and Weir[9] described the case of a man of 38, whose acute symptoms made their appearance after he had been in hospital for six weeks. He died at the end of ten days' irregular fever from general purulent peritonitis. The chief organisms seen microscopically were diplococci; a few bacilli were also present; unfortunately, no cultural results were obtained. A beautiful specimen was exhibited before the Pathological Society of London in 1906 by Bernstein.[10] The diagnosis was not suspected during life, but at the necropsy the stomach was found to be infiltrated from cardia to pylorus. There was no ulcer or lesion of the mucous membrane, but the submucous coat was fully half an inch in thickness, and consisted of a dense layer of leucocytes with fibrin surrounding them. Cultivations yielded a pure growth of a streptococcus. This stomach was removed from a woman of 65, of chronic alcoholic habits, and the onset of the disease was attributed to a drinking bout. The specimen is preserved in the Museum of the Royal College of Surgeons.

One of the effects of a pneumococcal infection of the stomach was well shown by a case described by Foulerton[11] in 1902, in which a man, aged 26, who had been shortly before treated for quinsy, died from intense toxæmia, evidenced by severe epistaxis, facial petechiæ, fever, and restlessness. At the post-mortem examination the stomach was found to be lined with an exudative membrane, so that the stomach had the same appearance as is produced by a strong mineral acid. The histological appearances showed necrosis of the glandular layer on its surface. The submucosa was only slightly thickened, and the other coats were practically unaltered. Cultures yielded growths of the diplococcus pneumoniæ and bacillus mesentericus vulgatus. Two varieties of bacilli and Gram-positive diplococci were seen only in the false membrane, and just beneath the muscularis mucosæ in the submucous coat. A similar case of superficial ulceration due to the pneumococcus is described by Dieulafoy.[12] These two examples of pneumococcal infection are types of superficial inflammation and belong to the class of membranous gastritis. An instance of this disease is also recorded by Otto Grünbaum,[13] but here no bacteriology is recorded except that a few staphylococci were seen in the stained specimen of the false membrane, which was vomited by the patient.

General Considerations of the Disease.

Etiology.—That the disease is due to bacterial infection of the submucous coat of the stomach there can be little doubt, and the most obvious suggestion is that the path of infection is through some small abrasion in the mucosa, which may or may not be revealed by microscopical examination. If this be the case the disease is strictly comparable to cellulitis of the subcutaneous tissues, which is often due to infection through a defect in the skin which has healed long before the cellulitis is observed. However, under these circumstances, one would expect the lesion to occur more often than it appears to in cases of ulcer of the stomach, simple or malignant, whereas these are assignable causes in only 10 per cent. of the cases. Probably some other factors are necessary for the production of this condition, and they may be concerned with the nature of the organism, and alterations in the bactericidal properties of the gastric juice.

Sex.—Males are affected far more frequently than females,

[7] Matthes: Inaugural Dissertation, Leipsic, 1905.
[8] Transactions of the Pathological Society, 1902, p. 282.
[9] Brit. Med. Jour., 1904, vol. ii., p. 1406.
[10] Transactions of the Pathological Society, 1906.
[11] Transactions of the Pathological Society, 1902, p. 286.
[12] Clinique Médicale de l'Hôtel Dieu de Paris, vol. iii., 1898-99, p. 219.
[13] Transactions of the Pathological Society, 1903, p. 314.

the ratio being 5 to 1 in favour of males. Unless the prevalence of alcoholic excess among males as compared with females be accepted no explanation of the male liability can be offered.

Age.—The commonest decade appears to be between 20 and 30, but cases have occurred in patients as young as 11 and as old as 70; my patient was only 13 years of age.

Alcoholic excess.—The fact that in nearly 25 per cent. of the recorded cases there is a history of abuse of alcohol lends colour to the view that the gastric insufficiency produced by chronic alcoholism favours the infection of the stomach by organisms, owing probably to the diminished bactericidal action of the gastric juice.

Dietetic errors.—These also are noticeable in the history of several cases. Actual poisoning by food or drugs may readily play a part in assisting the invasion of the deep layers of the gastric wall by micro-organisms. Pilliet[14] in 1893 produced a hæmorrhagic phlegmonous gastritis in animals by experimental ingestion of caustics such as sulphuric acid and croton oil, but the stomach wall in these cases showed no bacteria.

Pathology.—The essential lesion is a widespread inflammatory change in the submucous coat. It is greatly thickened, usually of yellowish-white colour, and much softened, so as to resemble pus. Microscopically the appearance is that of fibrin with masses of leucocytes entangled within it. This change is nearly always more marked in the pyloric half of the stomach. This may bear some relation to the anatomical situation of the oxyntic, or acid producing, cells of the gastric mucosa. The muscular coat shows varying degrees of infection and degeneration of the muscular elements. The serous coat is unaffected in a number of cases, but it may show leucocytic infiltration, especially in those cases where a secondary purulent peritonitis is present, as in the case here described. The mucosa in a large number of instances is to all appearances normal, but in others it is acutely inflamed, and raised from its bed in ridges; in others again there is atrophy of the deeper layers of glandular tubules, while in a few of the recorded cases the mucous surfaces have been pitted with tiny apertures so as to resemble a sieve, through the meshes of which pus could be squeezed from the infiltrated submucous layer. In my case there were conical masses of leucocytes wedged in between the deeper glandular tubules, and had the child lived longer the process of leucocytic infiltration might have reached the free surface of the mucous membrane. The duodenum is very rarely altered, and then only the mucosa is inflamed. Of secondary lesions, peritonitis, sero-purulent or purulent, is the commonest, and it has been found in rather more than half the cases. Pericarditis, pleurisy, abscess of the liver, and parotitis have also been observed.

Bacteriology.—The information on this point is somewhat meagre and in only a few instances have cultural results been obtained. Microscopical evidence, however, shows an organism of the streptococcus class to have been present in some 20 per cent. of the cases, and the form of inflammation is just such as one would expect to find associated with an infection of this type. Streptococci are by far the commonest causative organisms in diffuse subcutaneous cellulitis, and the isolation of the pneumococcus from the present case is not surprising, inasmuch as this organism bears a close resemblance to the streptococci, both in cultural reactions and in clinical manifestations of its activity. It should also be noted that diplococci were seen microscopically in two other cases. That the pneumococcus may produce diffuse inflammation of the mucous membrane itself is shown well by Foulerton's case, referred to above, a case which may be comparable to gastric erysipelas, whereas the cases we are dealing with are gastric cellulitis, the difference resting, not upon the nature of the organism, but the seat of its entry in the wall of the stomach. Pneumonia itself is a sufficient example of the diffuse character of the inflammation usually caused by this organism. Although peritonitis has been such a common secondary complication of phlegmonous gastritis, the nature of the organism found in the peritoneal fluid has only once or twice been recorded, and these have been streptococcal peritoneal infections. In my case the peritoneal fluid yielded a pure culture of the pneumococcus, and I leave to future investigation to show whether the stomach may not be to blame in some cases of so-called primary pneumococcal peritonitis.

Symptoms.—The most notable symptoms of the disease are epigastric pain, vomiting, and restlessness, often accompanied by delirium and some degree of collapse. These symptoms are seen at the earliest stage, but the symptoms due to peritonitis supervene so rapidly in many of the cases that the diagnosis becomes obscured. The pain is usually constant, and localised at first to the epigastrium; as a rule it is increased by pressure over this region. Local rigidity is also usually present. Vomiting has been absent in only about half-a-dozen of the recorded cases. The vomit is at first watery with the addition of mucus, then tinged with bile, either yellow or green. In no case of true phlegmonous gastritis has pus been found in the vomit, even where post-mortem examination has revealed a cribriform condition of the mucous membrane. Jaundice was present in 9 of Leith's series of cases. Fever is usually moderate, in only a few cases rising as high as 104° F. With regard to the action of the bowels, constipation is rather more common than diarrhœa, but in some cases constipation has been followed by diarrhœa. The tongue is dry and furred; the appetite is lost, but the patient usually suffers greatly from thirst. Mental phenomena are usually exhibited; they may be only represented by restlessness and mental anxiety, conditions present in nearly all the cases, or there may be actual delirium; the restlessness, as a rule, ceases only when collapse and coma supervene.

Diagnosis.—The difficulty of this is made sufficiently clear by the fact that no author claims to have diagnosed the condition, and, on only two or three occasions, has the diagnosis been made by exploratory operation. The acute onset, the local epigastric pain, tenderness, and rigidity, associated with a history, in 25 per cent. of the cases, of chronic alcoholism, appear to be the chief points which will aid us in the diagnosis, but when it is realised that the condition has to be differentiated from perforation and perigastric abscess due to ulcer or carcinoma of the stomach, from toxic gastritis, acute pancreatitis, liver abscess, and peritonitis, it will be allowed that diagnosis without exploratory operation is hardly to be expected. A history of chronic alcoholism will probably form the best guide, but the nature of the lesion will often be obscured by the symptoms of the consecutive peritonitis which is the cause of death in more than half the cases.

Prognosis.—Leith, up to 1896, found no authentic cases of recovery, and in the records of cases since that date it appears probable that such few instances as are stated to have recovered were really instances of abscess of the stomach and not primary phlegmonous gastritis.

Treatment.—One apparent contradiction to the foregoing statement is afforded by a case recorded by Bovee[15] only last year in which he describes a successful laparotomy for this disease, but a careful examination of his statement reveals the fact that the case presented a localised abscess of the stomach wall. His patient was a woman who was six months pregnant, and the abdominal exploration was undertaken on account of severe gastric pain of three days' duration, associated with vomiting and constipation. The stomach was found to be three-quarters of an inch thick in the middle of the greater curvature, and in the anterior wall of the pyloric portion there was a mass of the size of a man's fist. A long excision was made to explore the interior of the stomach and no primary lesion, such as ulcer, could be discovered; this incision was closed, while a smaller incision into the soft pyloric mass gave vent to two or three ounces of greyish pus; the abscess cavity was wiped out with gauze and a drainage-tube was inserted with gauze packing around it. The woman made a satisfactory recovery. The thickening of the greater curvature of the stomach was no doubt the customary inflammatory swelling which is met with at the periphery of most acute abscesses. Gastrostomy, or gastro-enterostomy, is suggested by Robson and Moynihan as the appropriate method of dealing surgically with the lesion, but it is a little difficult to see how the latter is going to cure a cellulitis of the stomach wall. Probably incisions down to the submucous coat, with free exposure of the stomach wall and packing off of the peritoneal cavity with gauze, left in position for several days, would offer the best

[14] Bulletin de la Société d'Anatomie de Paris, 1893, No. 22, and Bulletin Médical de Paris, Dec. 3rd, 1893, and Jan. 17th, 1894.

[15] American Journal of the Medical Sciences, 1908, p. 662.

chance of recovery. This is the treatment of cellulitis in the subcutaneous tissues, and if it could be effected without infecting the general peritoneal cavity it seems reasonable to hope that satisfactory results might be obtained. If the nature of the organism be ascertained the appropriate vaccine should be given, and probably these measures should be adopted even in the presence of a secondary peritonitis, together with cleansing of the peritoneal cavity by dry sponging and pelvic drainage if the amount of exudation is abundant.

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TWO CASES OF ACUTE DERMATITIS DUE TO BICHROMATE OF POTASSIUM.

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HONORARY MEDICAL OFFICER, WIGAN INFIRMARY.

ONE of these cases was kindly referred by my colleague, Dr. F. Rees, to the Skin Department of the Wigan Infirmary.

CASE 1.—The patient was a man aged 57 years. For six weeks he had been engaged in the dyeing of stockings. Sometimes he would work all day in the dye-house, but more usually for a few hours only three or four days in the week. Up to the end of the fifth week of his employment he saw no rash and felt no trouble or inconvenience. His arms then began to feel rough and his hands swelled. The back of the hands also felt itchy, but not severely so, and never at any time had he the least pain or smarting even when the rash was at its height. The rash underwent many remissions and exacerbations, depending upon whether he was employed in dyeing occasionally or for a longer period. At the same time that the rash appeared on the arms he noticed it also on the under part of the chin. The whole rash slowly disappeared if he left his work for a day or two. At the end of the seventh week he noticed that the inner surface of the elbows began to weep, and as the rash spread over the whole of the face he, being anxious, came to the infirmary.

The condition of the patient was then as follows. Upon the back of the hands, both forearms and arms as high as the rolled up sleeves, the front of the chest where his shirt was open, under the chin, round the throat in a gradually narrowing line to the back of the neck, the whole of the face and back and front of the ears were covered with a bright red diffuse erythematous rash, in parts peeling in yellowish-white flakes. A few varying sized patches of healthy coloured skin were dotted about the extensor aspects of the arms and upon the forehead, especially towards the outer borders of the rash. The initial lesion appeared to be a scaly papule with a red spreading areola. At the inner sides of both elbows, particularly the left, the inflammation was most intense, and moisture was exuding freely from beneath the thin scaly crusts.

CASE 2.—A man, aged 30 years, was employed occasionally in the same room and at the same work as the patient above. This man developed no rash until after the end of three months. He never used gloves and lifted the hose out of the chrome vat with his naked hands. The rash affected his hands, arms, throat, and the under part of the chin, but never spread further; it was slightly itchy and occasionally sore. He said it never got hold of him severely, because on its first appearance he would either stay at home a few days or do some different kind of work. I saw him when he had been absent from work for nearly a week. There was then present redness of his arms, forearms, and front of the neck, with some thin desquamation; the palms of the hands were peeling in thick flakes. The palms of this man's hands were very moist, unlike those of the other man, which were very horny, thick and dry, and round the periphery of whose palms were deep cracks and fissures. One would rather expect workers in chrome to have dry hands, as I find a useful prescription for hyperidrosis is a paint of 4 per cent. solution of chromic acid.

A case of potassium bichromate dermatitis (Case 1).

Both cases readily improved, getting quite well in a few weeks, under simple, soothing treatment.

The process of dyeing.—The stockings are first washed in a dolly tub with soap and cold water and are then rinsed and dried in the hydro-extractor. After this they are placed in the dye vat, containing 1¼ pounds of bichromate of potash dissolved in 200 gallons of water, and are boiled for one hour. The stockings are stirred mechanically during boiling in the vat. The liquor is boiled by forcing jets of steam through the bottom of the vat into the liquor. When sufficiently boiled the articles are lifted out by a pole, about 5 feet in length, on to a moveable tray, which is then wheeled to the dolly tub into which they are placed, and

afterwards dried. They are next placed into a second dye vat, containing 2½ pounds of logwood in 200 gallons of cold water, and are again rinsed and dried. From three to six charges of bichromate of potash are weighed by these men during the day; at these times they use indiarubber gloves.

The dangerous parts of these processes would appear to be, first, the weighing of the chrome; this is very unlikely to be the cause of the rash, as it is only done occasionally. Secondly, the continual standing over the boiling chrome vat whilst removing the stockings, and continual exposure to the steam in the dye-house. The injurious effects due to the manufacture of bichromate of potash and chrome lead dyes are well known to experts in industrial hygiene, and stringent regulations are enforced (*vide* Dr. T. M. Legge's article in Oliver's "Dangerous Trades"), but I am not aware that this particular form of dermatitis has been reported in medical literature, although I am informed that it is of common occurrence amongst unskilled workers in this particular process.

The men worked in trousers and shirt (shirts unbuttoned at the throat), and were engaged for considerable periods of the day, standing over the boiling chrome vat. Much steam was generated, and condensed as warm water upon the uncovered surface of the skin. Particles of bichromate of potash are carried up in the vapour from the boiling liquid of the vat. The inflammation is very severe at the bend of the elbow. This was particularly noticeable on the left arm of the first case. His left arm would be held during work much nearer the surface of the liquor, as with this hand he held the centre of the lifting rod, and with his right the end of it. The man wore long gloves reaching above the elbow, and the condensed solution of bichromate of potash would trickle to this part, be confined by the rubber gloves, and cause irritation by the friction of the gauntlet.

That particles of bichromate of potash are carried up by the steam is shown by the following experiments; they confirm similar ones carried out by Dr. Heise in Germany. I was not aware of his investigations until after those cited below had been performed. Bichromate of potash is not a volatile body, and therefore can only be carried mechanically in the steam. To settle this question a steam-jacketed copper pan was filled with bichromate solution within three inches of the brim, and over the same were arranged, parallel to the surface of the liquor, strips of white blotting-paper at intervals of 3 inches, ascending to the height of 2 feet from the surface of the liquor. Steam was then turned on, and the contents were vigorously boiled for one hour. Afterwards the strips of blotting-paper were examined, and it was found that they were stained in varying intensity up to the height of 18 inches, thus showing that particles of liquor were carried up with the issuing steam. This experiment was repeated three times and in each case the limit of the chromate spray varied from 15 to 18 inches. The height to which the spray can ascend no doubt will depend upon the size of the pan, rate of ebullition, local conditions of air currents, such as draughts, and the ventilation of the dye-house.

A noteworthy point in the clinical history of these two men is the very slight subjective symptoms complained of. Chrome sores are well known to be painless, and in these cases we have a severe and extensive inflammation of the skin, with very trifling feelings of irritation. Dr. Legge says that this salt in solution does not attack the unbroken skin. Generally speaking, this statement is quite correct, but the above cases prove that if associated with heat and moisture its activity is greatly increased. Any crack or sore into which the salt gains access may develop into the indolent chrome ulcer, and it is interesting in this connexion to inquire why chrome ulceration is so common an occurrence on the septum of the nose in men who work in an atmosphere of chrome dust.

Dr. Legge states that this particular "site of election is due to deficient blood-supply in this special piece of cartilage." The first symptom perceived when working with powdered chrome dust or entering a room containing it suspended in the air is itching or more severe irritation in the nose, sometimes accompanied by sneezing. The vibrissæ of the nasal openings are very efficient filters. I have shown elsewhere ("Catarrhal Fevers") that healthy nasal mucous membrane beyond the vibrissæ is sterile in man and animals. If such comparatively light things as micro-organisms can be prevented from penetrating further, denser particles will be the more readily. The orifices of the noses of workmen do not usually get carefully cleaned. Thus the continual breathing of the dust-laden air would result in the constant presence of an accumulation of chrome dust at this particular place; here also are found heat and moisture, the ideal conditions necessary to set up irritation and ulceration.

To remedy the risk of exposure no person should be allowed to bend or work over any open structure containing a boiling solution of bichromate of potassium within a distance of a few feet. Any instrument used to lift out articles from such solution should be provided with a flange to prevent the liquid running down upon the hands. Each workman who comes in contact with either the wet solution or dust ought to wash the parts exposed, and amongst others the orifices of the nose, with a reducing agent, such as a weak solution of bisulphite of soda. This should specially be enforced as a matter of routine when work is done. This precaution is considered so important in some well-regulated works that each person employed before leaving has to sign a paper to the effect that this regulation has been complied with. Greasing the skin is said to be helpful in preventing this form of dermatitis.

Wigan.

A CASE OF

SPINAL MENINGOCELE; OPERATION WHEN FORTY HOURS OLD; RECOVERY.

BY R. LEONARD LEY, M.B. CANTAB.

I SAW the following case in consultation with my partner, Mr. William Wyllys, on Sept. 14th, 1909, when he gave me the following history:—

The patient, an infant, was born on the evening of Sept. 12th, and at birth he noticed a mushroom-shaped swelling over the lumbo-sacral vertebræ which swelled up when the child cried, forming a globular mass of the size of a fives-ball. The greater part of the tumour was covered by healthy skin, but in the centre was a circular transparent portion, and on looking through it a black hole could be seen at the bottom, which he took to be the channel by which the sac communicated with the spinal canal. He covered the tumour with a pad and bandage, but as it grew rapidly larger, and was obviously in danger of bursting, he got me to see the case to judge as to the desirability of operating.

When I saw the child the mass was of the size of a tennis-ball, and the skin at the thinned edge where it joined the clear portion formed by the meninges had commenced to ulcerate. The baby, a male, was well formed and healthy. There was no deformity of the feet, sensation was normal, and the deep and superficial reflexes were normal. From the absence of dimpling and any sign of the cord when looking into the sac, I concluded that the case was one of meningocele rather than meningo-myelocele, and the absence of deformity and the normal sensation and reflexes were, I thought, against the diagnosis of syringo-myelocele. I decided to operate at once on the grounds that if left alone the baby must inevitably perish from rupture of the sac, and that if he survived an operation for removal of the sac there was no reason why he should not become a healthy and useful member of society.

At the operation Mr. Wyllys gave chloroform and ether by the open method, and the child was placed with his belly on a pillow and with his head hanging over the edge of the table, so that as little cerebro-spinal fluid as possible should escape. A nurse held the legs during the operation. I opened the sac away from the middle line, in case my diagnosis was incorrect, and having confirmed it, continued the incision to the base of the tumour and cut away the whole sac flush with the skin of the back. There was now left a large circular wound with a diameter of about 2½ inches, and in the centre was an island formed by the base of the meningeal sac about 1 inch in diameter. In the centre of this was a valve-like opening closed by a fold of the sac in its collapsed condition, through which cerebro-spinal fluid gushed with each breath of the child. This, no doubt, when the sac was tense corresponded with the round

black opening my partner saw. One side of the valve-like opening was quickly stitched to the other, and then the rest of the sac was bunched up with through-and-through sutures. The cellular tissues and skin were sewn up in four separate layers.

The operation from start to finish lasted 20 minutes. The wound was dressed with iodoform gauze, as I feared cyanide would injure the skin. The wound healed perfectly and all the stitches were removed in 12 days. After the operation the child never had a bad symptom of any kind, but I kept it always with the buttocks raised above the head.

When all the stitches had been removed there was left at the site of operation a tri-radiate scar with a long vertical limb and a short horizontal limb to the right; when the child cried or struggled it bulged slightly in much the same way as the fontanelle, and the range of movement from rest, when there was a slight depression, to the fullest bulging was not more than a quarter of an inch. This bulging has gradually decreased and at the time of writing (Nov. 22nd) there is only about an eighth of an inch range of movement. The child is well and weighs 10½ pounds, and would have weighed more, no doubt, but that the mother's milk gradually failing has necessitated his weaning. Apart from the scar on his back he seems perfectly normal.

The case seems worth recording for two reasons. First, on account of the rarity of the condition, as it is apparently the most uncommon protrusion met with in spina bifida, the order being, according to Mr. J. Bland-Sutton in his book on "Tumours" (though I quote from another manual): (1) myelocele, these cases all of necessity die; (2) meningo-myelocele; (3) syringomyelocele, usually associated with club-foot and trophic phenomena; and (4) meningocele, which is the least likely to be associated with any malformations. Taking into consideration the rarity of these conditions generally, meningocele must be very uncommon. Secondly, I think the case is of interest as an instance of an infant surviving a severe operation on the second day of life, and not only surviving it, but suffering practically no shock from it.

The book treatment of this condition is varied. Most of the text-books seem to favour injection of Morton's fluid, though they admit the possibility of—(1) suppuration; (2) diffusion of the fluid; and (3) leakage of the sac, all of which conditions are likely to prove fatal. It seems to me that an operation is without the second of these risks and gives a much better chance of permanent cure than any other method. Given a patient otherwise healthy with an inguinal hernia, the orthodox treatment is to remove the sac and to close and support the aperture of exit, and not to inject Morton's or any other irritating fluid; and if this is the right treatment for one sort of hernia it should apply to all sorts of herniæ. By an open operation it is possible to remove the sac and to close and support the opening, whereas by the injection of Morton's fluid the closure of the sac is quite problematical and no support is given. In a case such as the present the only hope of saving life lies in immediate operation, as the tension and thinness of the sac render rupture imminent.

Great Yarmouth.

THROAT AND EAR HOSPITAL, BRIGHTON.—Opportunity was taken at the annual meeting of the Brighton, Hove, and Sussex Throat and Ear Hospital, held at Brighton on Jan. 22nd, to emphasise the need of the original plans for the hospital being carried out. The accommodation now so much needed would have been provided when the building was erected had funds permitted, and although now possessing suitable wards and operating theatre there is no patients' waiting-room (the hall is now used for this purpose), and the committee has to assemble in the nurses' sitting-room. The demands upon the hospital have been in no small degree increased during the past year as the result of the medical inspection of school children, and thus more than ever has the existing accommodation been severely taxed. The hospital serves large numbers from the townships and villages in the county of Sussex, but invariably the out-patients' letters are found to have been provided by Brighton and Hove subscribers. A strong appeal was made at the meeting with the hope of securing more subscribers residing in the country towns and rural districts. In 1909 the in-patients numbered 343 and the out-patients 1490. A warm tribute was paid to the honorary medical staff and the honorary dental surgeon for their excellent work.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF RETENTION PNEUMONIA.

BY FRANK J. HATHAWAY, M.D. EDIN.,
PHYSICIAN TO THE KING EDWARD VII. HOSPITAL, WINDSOR.

I AM induced to report this case because it has many points of interest. First, the history is interesting in that the patient had previously suffered from, and was confined to bed with, a most irritating cough, no physical signs to account for which could be found. The abdominal pain of the distressing cough induced her to refrain from the act of coughing as much as she could, and in this way, I have no doubt, retention pneumonia was brought on by accumulation of secretion. Secondly, it is interesting because, except for the first and second days, the temperature did not rise above 99° F., while the general condition of the patient all through was excellent; the respiration-pulse ratio was quickened, and the signs of lobar pneumonia were particularly well marked and did not begin to clear up until the tenth day of the disease. Thirdly, the bacteriology is interesting in that the report on the sputum was: "Almost a pure culture of the pneumo-bacillus of Friedländer."

The patient was a strong, well-built girl, 22 years of age, unmarried, and a student in a training college. On the morning of March 21st, when she had already been for a few days under treatment, I was asked to see her again. She was not so well; her temperature was 100·6°, and her pulse and respirations were respectively 108 and 24 per minute. There had been no rigor, and there were no pleuritic pain and no definite signs in the chest. I saw her again that evening and found commencing signs of left basal pneumonia. Her temperature was 101·4°; her pulse and respirations were respectively 120 and 30 per minute. The next morning (which was the second day of the disease) I saw her again and found that her temperature was 99°, her pulse and respirations being respectively 100 and 24 per minute. I had her removed to Princess Christian's Nursing Home, Windsor. The signs of pneumonia were then well developed—namely, cough, dulness on percussion, well-defined bronchial breathing, and bronchophony. The sputum was not rusty; there was no pleurisy; there was some malaise, but she did not feel very ill. The course of the disease was then peculiar—the temperature never reached more than 99·4°, most of the time it was normal in the morning and 99° at night, the pulse ranging from 100 to 96, and the respirations from 28 to 20. Yet I never heard more typical signs of lobar pneumonia, which I was able to demonstrate to the nurses with the greatest ease.

There was no crisis. On the tenth day I found the dulness and bronchial breathing well marked, but there were fine redux crepitations on inspiration. On the eleventh day dulness was still present, but only a small area, the size of a five-shilling piece, of bronchial breathing and bronchophony, and the redux crepitations much coarser. On the thirteenth day the dulness had almost cleared up; there was no bronchial breathing, and the redux crepitations were clearing up. From this day on she made an uninterrupted recovery and was soon able to go home.

On the sixth day of the disease I sent a specimen of the patient's sputum to the Laboratories of Clinical Pathology with a short history, and in reply I received a report "that there was almost a pure culture of Friedländer's pneumo-bacillus but no pneumococci." I regret I have not the opportunity of consulting further literature, but on looking up my text-books I find practically no mention of a similar condition in Allbutt and Rolleston's "System of Medicine."

Professor W. Osler in his "Practice of Medicine" states "that the bacillus pneumoniæ of Friedländer may cause broncho-pneumonia and other affections, but is probably not a cause of genuine lobar pneumonia. ..... Czerny suggests that the relation of these ether pneumonias to abdominal operations is associated with the pain on coughing, which leads to an accumulation of secretion, and through this to retention or aspiration pneumonia." Again, Osler states,

"One occasionally meets with afebrile pneumonia"; and again, "That ether pneumonia is often lobular in type."

Windsor.

AN INFANT AS A CARRIER OF ENTERIC FEVER INFECTION.

BY ALICE OBERDORFER, M.B., CH.B. VICT., D.P.H. CAMB.,
ASSISTANT MEDICAL OFFICER OF HEALTH, EASTBOURNE.

THE following notes on a series of cases of enteric fever are of interest in that the cases were apparently due to a "carrier," and that the probable carrier was an infant of the age of eleven months, although the disease is so rare at such an age and the child had at no time definite clinical signs of enteric fever.

During the summer of 1909 about twelve cases of enteric fever occurred in and around a village of East Sussex. This epidemic was traced by the medical officer of health, Mr. H. Stott, who has kindly given me notes of the same, through milk to a polluted water-supply. The first case notified was that of Mrs. A on June 13th, 1909. Her illness commenced about May 23rd and she was removed to the isolation hospital on the day of notification (June 13th), remaining there until August 21st. During Mrs. A's stay in hospital her baby, aged eleven months, which was breast-fed until the day of the mother's removal to hospital, was taken charge of by Mrs. B, who took the child on June 13th. She commenced to be ill with typhoid symptoms about July 1st, was notified as a case of enteric fever on July 23rd, and died from that disease on August 3rd. As the baby was without anyone to look after it, a friend living in Eastbourne, Mr. C, went to the East Sussex rural district on July 23rd to bring the child back to his home, and returned to Eastbourne with it the same day, without having had anything whatever to eat or drink while in the rural district. On August 19th Mr. C, who had been sleeping with the baby, was notified as a case of enteric fever and admitted to the Eastbourne isolation hospital suffering from that disease, and on the following day his daughter, a child aged nine years, was admitted and died from enteric fever on August 29th. There was no enteric fever in Eastbourne and no local cause of the illness could be discovered. A bacteriological examination of the dejecta of the baby was made, but no typhoid bacilli were found.

The baby was now returned to the rural district, and Miss D had charge of it from August 22nd to Sept. 9th, and also did washing for the child up to Sept. 10th. About the 4th to the 9th of September Miss D sickened and was notified as a case of enteric fever on Oct. 7th.

As the baby had been ailing for some time and had had measles while in Eastbourne, on its return home it was seen by a medical man, who found the baby wasted and suffering from diarrhœa. There were, however, no other signs of enteric fever. A Widal test of the baby's blood was made on Sept. 5th and found to give a positive result.

Although it might be suggested that the cases in the rural district connected with the baby were due to the original cause of the epidemic, yet the sequence of the cases and the result of investigations made show that this possibility can be eliminated, and the Eastbourne cases confirm the deduction that the baby acted as a "carrier" and that infection from it was the cause of each case in the series.

Eastbourne.

LIVERPOOL MEDICAL INSTITUTION.—At the annual meeting held on Jan. 20th the following list of office-bearers and members of council was adopted:—President: Dr. Thomas Robert Bradshaw. Vice-Presidents: Mr. Robert A. Bickersteth, Dr. Richard I. Richardson, Dr. J. E. McDougall, and Mr. G. P. Newbolt. Treasurer: Dr. J. Lloyd Roberts. General Secretary: Mr. Thomas Bushby. Secretary of Ordinary Meetings: Dr. W. B. Warrington. Secretary of Pathological Meetings: Mr. Ernest E. Glynn. Librarian: Dr. W. B. Paterson. Editor of the Journal: Dr. John Hay. Council: Dr. W. T. D. Allen, Mr. A. P. Hope Simpson, Dr. A. Nimmo Walker, Mr. T. H. Bickerton, Mr. T. C. Litler-Jones, Dr. Herbert R. Hurter, Dr. Joseph Unsworth, Dr. Richard Humphreys, Dr. John Owen, Dr. A. A. Mussen, and Dr. J. Graham Martin. Auditors: Dr. Hubert Armstrong and Mr. W. N. Clemmey.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Jan. 24th, Dr. SAMUEL WEST being in the chair.

Dr. F. PARKES WEBER showed a case of Functional Abdominal Disease accompanied (formerly) by vomiting of fæces and enemata. The patient was a woman, aged about 36 years, who suffered from frequent attacks of vomiting, abdominal pain, and tympanites. She was usually very constipated, and often complained of headache. No evidence of organic disease could be detected. During the last 14 years she had been in various hospitals in London and elsewhere, and sometimes her condition (tympanites, vomiting, abdominal pains, &c.) had been considered desperate. On various occasions laparotomies had been performed (four times altogether), and the stomach, colon, and all the abdominal viscera had been thoroughly explored; on the last occasion (in a large London hospital, August, 1909) two incisions were made, one above and one below the umbilicus, but no evidence of any organic disease had ever been detected. At intervals the patient appeared to have been able to work hard as an expert cook. The history of the case up to 1903 had been described by Dr. Parkes Weber in *Brain*, 1904, Vol. XXVII., p. 170. In the years 1896 and 1897 vomiting of formed fæces and of oil enemata or enemata coloured with methylene blue was observed, and Sir Frederick Treves had given an account of the case in the Transactions of the Medical Society of London, 1898, Vol. XXI., p. 224.—Dr. L. G. GUTHRIE discussed the condition from the point of view of enterospasm, and Mr. A. E. BARKER gave the details of a case in which he considered there might have been a communication between the colon and the stomach.—Mr. T. H. OPENSHAW said that he had operated on a case in which the patient was thought to have been suffering from reflex peristalsis; there was a distinct lump along the greater curvature of the stomach and at the operation he found there was a communication between the stomach and the colon.—Dr. PARKES WEBER, in replying, pointed out that an important point in regard to these cases was the appearance of scybala in the vomited fæces.

Mr. V. WARREN LOW showed a case of removal of Carcinoma of the Pelvic Colon 18 months after operation. The patient was now in good health and had increased in weight to the extent of 10 or 12 pounds since the operation. His bowels were now perfectly regular and he had no inconvenience of any sort. Mr. Low had examined him with the sigmoidoscope a week ago and had not found any evidence of recurrence. The sigmoidoscope passed easily for 8 inches and the lumen of the bowel, when inflated, could be inspected beyond that distance. The instrument could not be passed easily beyond that point owing to the shortening of the attachments of the bowel, as there did not appear to be any definite stricture. According to a note on the removed growth by Dr. B. H. Spilsbury the cancer formed a polypoid mass projecting into the lumen of the bowel. A separate mass of growth was situated on the opposite wall and infiltrated the mucous membrane and muscular coats along the line of incision of the bowel. It was probably the result of transplantation from the polypoid mass. The peritoneum at the back of the growth was puckered but was not invaded by growth. There was marked muscular hypertrophy of the bowel. Microscopically the growth was adeno-carcinoma.

Dr. GUTHRIE and Mr. ARTHUR EDMUNDS showed a case of Paresis of the Left Cervical Sympathetic with Retarded Growth of the Left Upper and Lower Extremities and Wasting and Paresis of Intrinsic Muscles of the Left Hand associated with Caries of the Cervico-dorsal Spine. The patient was a girl, aged 6 years. At three years of age "paralysis" of the left arm was noticed and some time later of the left leg. Her left arm and hand were much smaller than the right. Her left hand and forearm were paler than the right. The radial pulses were equal. There was no paralysis of any muscles of the shoulder, the arm, and the forearm, but all the muscles were less developed than those of the right side. There were wasting and paresis

of the intrinsic muscles of the left hand. The fingers were more slender and tapering than those of the right hand. She could not approximate the fingers; the two middle fingers were extended at the metacarpo-phalangeal joints. The middle phalanges were flexed and the distal phalanges were extended. There was dimpling between the knuckles on the left but not on the right hand. The left palm was flattened and the hypothenar and thenar regions were slightly wasted. Her left leg and foot were distinctly smaller than the right, but there was not any paralysis nor rigidity. The condition pointed to a lesion in the neighbourhood of the eighth cervical and first dorsal segments, probably tuberculous.

Sir JOHN BROADBENT, Mr. WILLMOTT EVANS, and Dr. WILFRED HARRIS showed cases of Syringomyelia.

Mr. OPENSHAW showed a case of Nævus of the Forearm and two cases of Paralysis of the Spinal Accessory Nerve after removal of the cervical glands.

Dr. F. S. PALMER showed a case of Weakness and Wasting of the Muscles of the Right Forearm and Hand following an injury to the elbow-joint.

Dr. F. J. POYNTON showed a case of Cretinism and Psoriasis.

Dr. W. HILL demonstrated by means of a new improved direct-vision laryngoscope a Benign Laryngeal Growth in a woman.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Glycosuria and Graves's Disease.—Treatment of Gastric Ulcer.

A MEETING of this section was held on Jan. 7th, Dr. JOHN M. FINNY being in the chair.

Dr. HENRY C. DRURY read a paper on Glycosuria and Graves's Disease, in which he drew attention to recent observations which tended to show that the combination of these two conditions was sufficiently marked to warrant the idea that there was some connexion between them. He supplemented these remarks by detailing a case recently under his care in Sir Patrick Dun's Hospital, Dublin, the patient being a girl, aged 18 years, suffering from Graves's disease, which had existed for several months, and who had recently developed diabetes with severe symptoms, including acetonuria. The patient was being kept under observation and was getting worse.—Dr. FINNY said that he had examined several cases of Graves's disease with relation to the question as to whether glycosuria was present or not, and it had been a surprise to him to find that a patient, who had no sugar in the urine at first, subsequently developed sugar. This patient was a girl, aged 18 years. She had been under his care and daily observation since the autumn. Sometimes the sugar was in distinct quantities; at other times it could barely be demonstrated; the previous day a quantitative analysis had shown 0·4 per cent. The case was a well-marked one of Graves's disease, with all the phenomena peculiar to the condition.—Dr. JOHN A. MATSON recalled a case of exophthalmic goitre of very rapid course. The urine at the time of admission to a hospital was free from sugar. About the tenth day sugar and diacetic acid were found in the urine. Just before death the sugar disappeared, but the peculiar fruity smell from the patient's breath still persisted.—Dr. JOHN LUMSDEN cited a case which had been under observation for four or five years. The woman had at first signs of Graves's disease. She suffered from tachycardia, when the pulse-rate ran up to as much as 200. About nine months before death she developed glycosuria and signs of undoubted diabetes. She passed up to 200 ounces of urine in the 24 hours and had a corresponding thirst. Diacetic acid was also present. She wasted rapidly and died with well-marked diabetic coma.

Dr. JAMES CRAIG read a paper on the Treatment of Gastric Ulcer.—Dr. FINNY said that the raw egg and milk treatment of Lenhartz was very valuable.—Dr. T. P. C. KIRKPATRICK said that, apart from any medicinal or dietetic treatment, the most important thing for the patient was absolute rest. It was even more difficult to know when permission might be given for the patient to move than to know when the diet might be increased. The condition of the teeth was a matter of very great importance. If a patient had a septic mouth there was very little use in treatment until the condition of the mouth was improved. It seemed to him, *a priori*, that rectal feeding, especially at the beginning, ought to give admirable results; but he thought that the cases would be few in which it would be tolerated for any length of time, and even where it was borne satisfactorily it was really only starvation. The most difficult of all points in connexion with gastric ulcer was to decide what should be done for patients with gastric hæmorrhage. Immediate operation had not been found satisfactory, but if they waited for a second hæmorrhage it might prove fatal.—Dr. LUMSDEN spoke in approval of the ice-bag.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The annual meeting of this society was held at Manchester on Jan. 21st, Dr. J. W. Martin (Sheffield) being in the chair.—Dr. W. K. Walls (Manchester) was elected President and Mr. W. Fingland (Liverpool) treasurer for the year 1910.—Mr. R. Favell (Sheffield) showed a large Solid Ovarian Tumour which he had recently removed from a girl, aged 15 years, who had never menstruated. There was a little ascites. Microscopically the growth was a papillary adeno-carcinoma.—Dr. A. Donald (Manchester) and Dr. T. B. Grimsdale (Liverpool) doubted if the tumour, in spite of its microscopical appearances, would prove to be malignant. They had several years ago removed precisely similar growths from girls aged 7 and 18 years respectively, and in neither case had there been a recurrence.—Dr. W. E. Fothergill (Manchester) showed an example of Ruptured Cornual Pregnancy, consisting of a fœtus four inches long and a thick-walled ruptured cornual gestation sac of the size and shape of a large hen's egg. The patient had borne four children in the left cornu of the uterus, and then pregnancy in the right cornu led to its rupture, which demanded an "emergency" operation. The cornu was excised by a V-shaped incision, the ovary and tube being left. The patient is now again four months pregnant. Dr. Fothergill also showed the corpus of a much hypertrophied uterus removed from a woman, aged 43 years, who had not been pregnant for six years. Hæmorrhage of a month's duration had caused profound anæmia. The uterine wall was 1½ inches thick. The hyperplasia was shared in due proportion by the endometrium and the muscle, the blood-vessels of which were not more thickened than is usual in a woman of the patient's age. The glands, stroma, and vessels of the endometrium were normal. Dr. Fothergill protested against the use of the name chronic metritis in cases of this kind, which were commonly found in patients who had no history, no symptoms, no physical signs, and no pathological change indicating the existence, at any time, of any infective or inflammatory process.—Dr. Grimsdale recounted his experiences with a case of Uretero-vesico-vaginal Fistula in order to indicate the advantages of the finest silk over catgut as a suture material in such cases. The patient was a virgin, aged 24 years. Another surgeon had removed a ureteral calculus by the vaginal route, the fistula resulting. Several plastic operations in which catgut was used failed, leakage occurring on or after the fifth day. On one occasion fine Japanese silk, No. 0000, was used, and the fistula was reduced to a pin-hole. An attempt to close this with catgut failed, and a large fistula resulted. Several unsuccessful operations with catgut followed. Finally, the silk was again used and with complete success. Dr. Grimsdale believes that coarse catgut tears the sodden delicate structures, whilst fine catgut is absorbed too quickly.—Dr. A. W. W. Lea (Manchester) and Dr. A. J. Wallace (Liverpool) pointed out the advantage of using Schuchardt's paravaginal incision to facilitate getting at such a fistula when the vagina is very small.—Dr. D. Lloyd Roberts (Manchester) reported a case in which a woman, aged 39 years, suffering from metrorrhagia had noticed gradual enlargement of the abdomen for 12 months. Two months before operation an attack of severe left-sided abdominal pain occurred. A very tender cystic swelling was felt on the left side of the large fibroid tumour. Torsion of the pedicle of a fibro-cystic uterine tumour was suspected. On opening the abdomen an ovarian cyst with twisted pedicle was found. The fibroid uterus was also removed.—Dr. W. Fletcher Shaw (Manchester) showed a Uterine Fibroid which had undergone

red degeneration. It had been removed by Dr. Walls from a nulliparous woman, aged 39 years. The tumour was a rapidly growing one, and there had been malaise, raised temperature, and quickened pulse for two days. Progress was favourable until the ninth day, when the temperature rose to 102° F. and two days later it reached 105° and was accompanied by a rigor. Acute ulcerative endocarditis was diagnosed by a physician, and anti-rheumatic serum was used, though no culture could be obtained from the blood. She eventually made an excellent recovery. Microscopically the tumour showed an enormous number of small thin-walled blood-vessels, many of which were thrombosed, the others being engorged with blood. No micro-organisms were found by microscopical examination. Cultures could not be made owing to the presence of preservative fluid.—Dr. W. Blair Bell (Liverpool) showed a Bicornuate Uterus with a cystic ovary on one side and a fibroma of the ovary with a large cyst of the hilum on the other.—Dr. A. Stokes (Liverpool) showed some specimens of Fœtal Deformities, including one of cervical spina bifida, which had presented by the brow, and one of cyllosomus, with which had been associated hydrorrhœa for two and a half months and a partial placenta prævia.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held on Jan. 7th, Dr. Neville T. Wood, the President, being in the chair.—Arising out of Mr. Keetley's lamented death, the President proposed the following motion:—

> The West London Medico-Chirurgical Society takes this opportunity of expressing a deep sense of obligation to its distinguished founder, Mr. Charles Bell Keetley, and hereby records a vote of sincere condolence with his nearest relatives.

This was seconded by Dr. Seymour Taylor and carried unanimously.—Dr. Seymour Taylor showed a case of Tabes Dorsalis with signs of Early General Paralysis, the patient being a man, aged 61 years, with a history of having had a hard sore 12 or 14 years ago, for which no treatment was given. The interesting points in the case were: (1) the co-existence of probably tertiary manifestations in a muscle, namely, a mass in the right tibialis anticus; and (2) degenerative changes (fourth stage) in the central nervous system.—Dr. J. A. Coutts showed a well-marked case of Juvenile Rheumatoid Arthritis in a child 6½ years old. All the large joints and all the first inter-phalangeal joints of the fingers and toes were involved; there was persistent pyrexia; the disease had continued for two years.—Dr. E. A. Saunders showed a case of Diabetes occurring in a girl aged 14 years. He first saw her in January, 1907, when she was admitted into a hospital complaining of polyuria and thirst. There was sugar in the urine, the specific gravity being 1032. Under a strict diet the urine became sugar-free and the thirst and polyuria disappeared. Since her discharge from the hospital sugar had been present from time to time, though she had been kept on a fairly strict diet, having only the carbohydrate present in gluten bread and the lactose of milk. At the present time she was well nourished, with a clean, moist tongue. Her skin was perhaps a little rough. Acetone and diacetic acid were now present in the urine as well as glucose. He pointed out the unusual benign course the disease had run so far in a child.—Dr. Frederick Palmer showed a case of Recurrent Carcinoma affecting the Cerebro-spinal System in a woman, aged 42 years, whose right breast had been removed four and a half years ago. The present condition began eight or nine months ago with ptosis of the right eyelid. There was now some local recurrence of the disease and besides the ptosis there was abnormality of some of the ocular muscles and of the plantar and knee reflexes.—Dr. Palmer also showed a well-marked case of Tabes Dorsalis in a man aged 41 years, whose wife was delivered of twins only four months ago.—Dr. P. S. Abraham showed a case of Mycosis Fungoides. The lesions, which included desquamating eruption and some ulcers and scars of old ulcers, were very much like those of syphilis, and the man gave a history of having had venereal disease some years ago. Dr. Abraham had nevertheless come to the conclusion that it was a case of mycosis fungoides.—Dr. Leonard Mark said that in a case of this disease which he had seen there were numerous brown patches over the trunk and limbs, and ulceration over some dozen of them.—Mr. N. Bishop Harman showed a case of Abnormal Congenital Pigmentation of an Eye. The patient, who was a child aged 2½ years, showed an almost black iris and dark-brown mottling of the sclera of the right eye, the left iris being of an ordinary brown and the sclera normal.—Mr. Saunderson showed (for Mr. L. A. Bidwell) a man from whom Mr. Bidwell had removed the Left Half of the Tongue completely. The wound soon healed, and movement had returned to the tongue.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 12th, Dr. James Swain, the President, being in the chair.—Dr. J. R. Charles read a paper entitled "Some Cases of Bacillus Coli Infection of the Urinary Tract." In it a series of cases were described in which general symptoms with pyrexia and rigors were present without obvious urinary symptoms. Bacteriological examination revealed the presence of bacillus coli in the urine. In treating the cases, urotropine had been found valuable, and serum-therapy was occasionally useful, but vaccines derived from bacillus coli had not proved reliable, their effect being only temporary and relapses occurring.—The President said that he had seen vaccines prove effective.—Mr. E. W. Hey Groves described three groups of infection of the urinary tract with bacillus coli—namely, (1) cases with general symptoms and absence of urinary symptoms such as Dr. Charles had dealt with; (2) cases with irritable bladders, usually cystitis and occasionally ulceration of the bladder; and (3) cases of advanced pyonephrosis or renal abscess. He related his experiences in operating on the last class.—Dr. E. Emrys-Roberts remarked on the acuteness of the cases Dr. Charles had described, and suggested that in acute cases treatment, especially with vaccines, was likely to prove more efficacious than in chronic cases.—Mr. G. Munro Smith dealt with the historical aspect of the subject, reminding the meeting that 15 years ago surgeons scouted the idea of infection of the urinary tract except by catheterisation, and that it was to Guyon that the credit of first insisting on the possibility of direct infection from the intestinal canal was due.—Dr. Carey F. Coombs spoke of "bacillus coli bacilluria" in children without urinary symptoms. He said that in children urotropine was generally useless, but the cases could be successfully treated by giving full doses of sodium citrate until the urine became alkaline.—Dr. J. M. H. Munro described the vaccine therapy of mixed urinary infections, particularly cases in which bacillus coli was secondary to tubercle. Injections of tuberculin should be first given and afterwards vaccine derived from bacillus coli. He pointed out that the antitoxic serums were apt to produce severe constitutional symptoms, but vaccines were free from this drawback.—Mr. C. F. Walters made a preliminary communication entitled "Jejunal Ulceration, not Post-operative," in which he directed attention to examples of catarrhal ulceration of the jejunum, sometimes terminating in perforation, a condition which appeared hitherto to have been undescribed and unexplained.—The President mentioned that he had met with such a case occurring during the puerperium.—Mr. W. Roger Williams read a paper on Malignant and Non-malignant Tumours of Bilateral Origin, in which he argued for a developmental predisposition to tumour formation.—Dr. Emrys-Roberts, Dr. J. Michell Clarke, and Dr. J. A. Nixon discussed the paper.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Dec. 16th, 1909, Dr. Francis H. Hawkins, the President, being in the chair.—Mr. J. O. Skevington showed a woman who had suffered from an Unreduced Dislocation of the Shoulder for 14 weeks. Excellent movement in the shoulder-joint had resulted from the operation of excision of the head of the bone.—Dr. Norman Glegg (Datchet) showed a Horny Excrescence Removed from a Boy's Neck; it was three-quarters of an inch in length and exactly simulated a horn in appearance.—Mr. A. Douglas Crofts read a paper upon Purpura. He divided cases of purpura into two main classes—namely, (1) those in which the purpura was secondary to some well-known morbid process, and (2) those in which the purpura was the essential feature. Under the first heading cases due to infectious, toxic, senile, nervous, and mechanical causes, and also those due to chronic disturbances of nutrition were included. Each of these causes was taken separately, special reference being made to those conditions which frequently occurred but were liable to be overlooked, such as jaundice, Bright's disease, cirrhosis of the liver, and some others. The primary purpuras were divided into four groups—namely, (1) purpura simplex, (2) purpura rheumatica,

or rather purpura with arthritis, (3) purpura hæmorrhagica, and (4) Henoch's purpura. A comparison between Stephen Mackenzie's well-known analysis and the one given in Osler and Macrae's latest work was made to emphasise the fact that those cases years ago which were supposed to be due to rheumatism were in reality, according to these authorities, quite distinct from that disease; and Dr. H R. Dean's cases were quoted in which an analysis of 52 cases of primary purpura was made and in none of them was a history of rheumatism forthcoming. The close connexion between urticaria, erythema, Henoch's purpura, purpura rheumatica, and angioneurotic œdema, was mentioned at some length. The differential diagnosis of Henoch's purpura from intussusception and from those cases where there was œdema into the wall of the bowel was discussed, and the paper concluded with a description of the condition of the blood in purpura.—Dr. W. M. Sadler (Slough) read notes of a case of Henoch's Purpura. Abdominal symptoms were present at an early stage of the illness and the patient subsequently underwent operation in King Edward VII. Hospital, Windsor, but the result was unsuccessful.—Dr. C. R. Elgood gave an account of the post-mortem appearances observed in the above case.—Dr. Norman Glegg related a case of Fœtal Purpura that had come under his notice.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Jan. 21st, Mr. C. Gordon Watson, the President, being in the chair.—Dr. Alexander Morison read a paper on a Study of a Case of Mitral Constriction. He considered the signs presented by it in a condition (1) of diminished cardiac force, and (2) when cardiac force was restored. In the former, two stages were discussed—namely, that in which a tachycardia of regular rhythm and without bruit was present, and that in which, with a slow heart and regular auriculo-ventricular action, a faint diastolic bruit alone was heard together with triple rhythm at the apex and reduplication of the second sound at the base. With restored cardiac force he discussed the prolonged crescendo murmur of the mitral constriction which became pronounced. In considering the nature of the triple rhythm, he expressed his belief that it was a regularly recurring extrasystole closely approximated to the preceding systole, and only associated with one auricular pulsation. As regards the crescendo murmur he suggested that the three factors which participated in its production were auricular systole, ventricular systole, and ventricular diastole, the only phases in the cardiac cycle *inactive* being auricular diastole and the last phase of ventricular systole.—Dr. W. Langdon Brown and Dr. T. Grainger Stewart took part in the debate and questioned the physiological possibility of ventricular diastole having any share in the production of the crescendo murmur.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society, held on Nov. 16th last in the Royal Infirmary, Dr. W. Ward-Smith being in the chair, Dr. F. W. Eurich read a paper on Brain Abscess, in which he especially referred to the differential diagnosis between abscess, middle-ear disease, sinus thrombosis, and meningitis, and illustrated his remarks with charts and notes of 40 cases. In conclusion he particularly pointed out: (1) the inconclusive results of lumbar puncture; (2) the unreliability of the knee-jerks as a localising symptom; and (3) the value of the absence of corneal and conjunctival reflexes.—The discussion on the paper was adjourned until Jan. 18th, when Mr. F. W. Goyder opened the discussion by reading a few notes on the Treatment of Cerebral Abscess. He described the various methods for exposing the brain according to the position of the abscess, and urged that as the greater proportion of cerebral abscesses were due to ear disease more attention should be given to running ears in school children.—Dr. Eurich asked for details from the general practitioner of the early symptoms of brain abscess, and wondered if the use of the chisel in operation had anything to do with the bad results.—Dr. A. Bronner said there were no early symptoms. They came on suddenly without any previous warning. He thought that no operation should ever be undertaken without first doing a lumbar puncture. As regards discharging ears, their importance was chiefly when they ceased discharging.—Dr. A. Manknell said there was a great difficulty in getting patients to consent to operation because there was a discharging ear and thought it best to leave them alone till there were definite symptoms of cerebral abscess.—Mr. J. Wherry Willson thought that getting consent to an operation was merely a matter of educating the public.—Dr. J. Gilmour and Dr. J. B. Lockerbie also spoke.—Dr. Bronner read notes on the treatment of certain Diseases of the Tonsils by Hartmann's and Arelli's tonsil compressors and showed the instruments.—Mr. J. Phillips read a paper entitled "A Recent Experience with a Certified Midwife," showing that in spite of their training and teaching their ideas of asepsis were still a negative quantity, and also that in spite of their dirty methods the patients as a rule had a perfectly normal convalescence.—The paper was discussed by Dr. Gilmour, Dr. Lockerbie, Dr. W. E. Heilborn, and Dr. Eurich.

Reviews and Notices of Books.

A System of Clinical Medicine, Dealing with the Diagnosis, Prognosis, and Treatment of Disease, for Students and Practitioners. By THOMAS DIXON SAVILL, M.D. Lond., Physician to the West-End Hospital for Diseases of the Nervous System; Physician to St. John's Hospital for Diseases of the Skin, London. Second edition, revised by the Author, assisted by FREDERICK S. LANGMEAD, M.D. Lond., Casualty Physician to St. Mary's Hospital, Assistant Physician to the Seamen's Hospital, and Physician to Out-patients at the Paddington Green Children's Hospital; and AGNES F. SAVILL, M.A. St. And., M.D. Glasg., Assistant Physician to St. John's Hospital for Diseases of the Skin. London: Edward Arnold. 1909. Pp. 963. Price 25*s.* net.

OUR review of the second edition of this valuable work appears in very sad circumstances. As all our readers know, the original and talented author met a sudden death at Algiers about a fortnight ago, where he had gone to take a well-earned holiday on the completion of his literary labours.

During the middle of the last century many text-books of medicine were written in what might be called a narrative style, the features of particular diseases being outlined and illustrated by descriptions of actual cases. This method, so admirably used by Sir Thomas Watson and by Trousseau with their charming literary style, served to render the descriptions singularly vivid and interesting, and their works have survived as medical classics. During this period, when the study of medicine was largely clinical and when the routine of the physical examination of patients were being developed, this method was of great value and assisted in the differentiation of numerous diseases, especially when combined with observations in the post-mortem room. Pathological research, however, soon tended to dominate the classification of disease, and the modern type of descriptive or systematic text-book was evolved. According to this general plan diseases were grouped together on a pathological or etiological basis and described each separately as a morbid entity, causation, pathology, morbid anatomy, symptoms, diagnosis, and treatment being discussed. The advantage of this method from a didactic standpoint is obvious. It groups together the phenomena of disease and enables a general conception to be formed of the clinical features and usual course of a given morbid condition. On the other hand, its disadvantage has frequently been pointed out—viz., that it elevates what is really an abstraction into an entity: in other words, describes the disease without special reference to the patient with the disease.

To Dr. Savill occurred the original, and as he admits the ambitious, idea of writing a text-book of medicine which should be clinical in its method, so as to enable the cardinal symptoms presented by the patient to be referred to their true cause—in other words, of following the method which must of necessity be adopted in practice, working from the effects back to the cause. Such a work, if well carried out, should obviously be of value to the senior student in the

wards and to the practitioner, and should occupy a position analogous to that of a practical or laboratory handbook in other sciences, the descriptive work being comparable to the systematic handbooks. In our review[1] of the first edition we referred to the admirable manner in which Dr. Savill had carried out his idea, at the same time indicating some of its limitations, and we wished his book the success it deserved. We learn from the preface that the first edition has been out of print for nearly two years, and Dr. Savill, with the valuable assistance of his wife, Dr. Agnes Savill, and Dr. F. S. Langmead, has taken the opportunity of making certain changes in this edition. In the first place it now appears in one volume instead of two, which renders it more convenient. This has been effected without producing a too bulky volume. In the second place, two main types are now used instead of three, the smallest type being no longer employed. The arrangement and scope of the work are unchanged, and, as Dr. Savill states, clinical medicine moves less rapidly than pathology, so that no very extensive alterations have been necessary. For these reasons no detailed criticism is here needed. The subject matter appears to have been brought well up to date, and such changes as have been made are in the nature of improvements. It may, however, be of interest to indicate briefly again the manner in which Dr. Savill treats the subject, having regard to the large new audience which the volume may now command. After the introductory sections on case-taking and diagnosis in general and on the facies or external appearances of disease, each chapter is devoted to an organ or anatomical region of the body and is divided into three parts. The first deals with the symptoms which may indicate disease of that organ or region and the fallacies incidental to their detection. It also includes a brief differential account of the various causes which may give rise to them. The second part deals with the physical signs produced by disease in that region and the methods of investigating them. The third, which forms the largest part of each chapter, begins with a clinical classification of the maladies affecting that organ or region and a summary of the routine procedure to be adopted in their diagnosis, after which the individual diseases are described, the descriptions being adequate rather than exhaustive. Treatment is also discussed, or, to be more accurate, indicated in outline, and some useful formulæ are given in an appendix.

Dr. Savill's method of classification on a clinical basis facilitates reference, and should, therefore, be of great assistance to the senior student in the wards and to the practitioner in elucidating the nature of a difficult case. It lends itself more readily to a convenient and easily remembered grouping in regard to some organs or regions than others; thus the sections on the urine and on diseases of the skin may be mentioned especially as examples of its success; in other instances conditions with no very obvious relations save the possession of one common symptom are grouped together, as in the chapter on General Debility, Pallor, and Emaciation; or, again, the association may be one of simple contiguity—e.g., in the inclusion of diseases of the thyroid in the chapter on the Upper Respiratory Passages. Diseases of the nervous system are dealt with in an interesting manner, and the grouping of the various conditions is convenient.

The essential feature of Dr. Savill's book is its practical character. It aims at teaching a practical method of diagnosis, and the directions given in regard to all diagnostic procedures are thorough and often comprise useful hints. Cross references are abundant, and useful footnotes are given to journals, monographs, or text-books in which special information may be found. We can again confidently recommend Dr. Savill's book as a helpful and practical work on clinical diagnosis, and deeply regret that this renewed commendation of his work can never meet his eye.

[1] THE LANCET, April 25th, 1903, p. 1174; August 19th, 1905, p. 525.

Military Sanitation for Soldiers Serving in Hot Climates. By Major ROBERT J. BLACKHAM, D.P.H. Lond., R.A.M.C., of the Middle Temple, Barrister-at-Law, Honorary Associate of the Order of St. John; Divisional Sanitary Officer, First Division, Indian Army; Fellow of the Society of Medical Officers of Health and of the Royal Institute of Public Health; Member of the Royal Sanitary Institute. With Illustrations and Charts. Bombay: Thacker and Co. 1909. Pp. 144.

As its name implies, this is not a work on general sanitation but a book dealing with the subject of military sanitation entirely from the point of view of the rank and file of the army. It is dedicated by permission to Lieutenant-General Sir James Willcocks, K.C.M.G., C.B., D.S.O., who is General Officer Commanding the First (Peshawar) Division of the Indian Army, and whose deep interest in every detail affecting the well-being of the soldier is familiar to all classes throughout the British Empire. The scheme of the book is based on a senior course of lectures delivered by the writer to officers and non-commissioned officers of His Majesty's troops at Devonport while he was acting as specialist sanitary officer of the Western Area of the Southern Command. These lectures have been carefully revised and adapted to meet Indian requirements, and were delivered recently to officers and non-commissioned officers at Peshawar in accordance with the scheme of garrison winter instruction promulgated by Lord Kitchener. The book is simply and clearly written in non-technical language and can thus be easily understood by non-professional readers. Good chapters on the communicable diseases of soldiers, the clothing, feeding, housing, and "the making" of the soldier are given. Professor Chittenden's researches on diets are lucidly mentioned in the chapter on feeding, the conclusion being that men in good health, who are training or undergoing military manœuvres, may without any increase of non-nitrogenous food continue to remain in good health and gain in strength and activity on one-third to one-half the amount of the nitrogenous food usually considered essential. This fact is a matter of supreme importance to military commanders, as in time of siege or during expeditions, where the amount of proteid food is limited, its knowledge may enable them acting on medical advice to formulate a dietary which would economise the food-supplies available, without any marked deterioration in the strength and activity of the troops.

Professor Chittenden's experiments and conclusions have, however, been adversely criticised by Professor W. D. Halliburton and Dr. Robert Hutchison in England, as they believe in allowing a reserve of proteid in a dietary to assist the organism to resist disease, and there is unquestionably very much to be said in favour of their view, which, we may add, was markedly proved from the dietaries of the men of the Natal Field Force under General Buller in 1899–1900 when contrasted with those operating under more limited dietaries in other areas during the Boer war. It is also pointed out that cheese is an article of diet with a higher fuel value than beef, and that it is one of the best of the common articles of food. With the single exception of occasional issues in South Africa, little or no attempt has been made to supply such cheap and excellent forms of food as cheese and oatmeal, although these articles would undoubtedly form excellent means of supplying a pleasant change from the everlasting "bully beef" and biscuits on active service. The value of sugar in the field ration of the soldier is another matter

which Major Blackham thinks is not appreciated as fully as it might be in continental armies, although the British field service emergency ration uses it in combination with cocoa paste. Some sound advice is also embodied in the chapter on clothing. Munson's method of waterproofing garments with a solution of lanolin in benzine is fully described, as is also the subject of boots and socks. We would like to see the question of the provision of sleeping suits or pyjamas taken up, as under present conditions the British soldier does not have such articles issued to him and he has either to sleep in his ordinary day shirts or to purchase sleeping suits out of his pay.

In the chapter on the "making" of the soldier particular stress, we are glad to note, is laid on the maxim that "a man is only as strong as his heart," and that no muscular development is of any value which is obtained at the expense of an over-worked heart. This section is of particular interest at the present moment, not only to military surgeons but also to general practitioners, as it suggests the amount of cardiac damage that may ensue from the non-professional "physical culture" quacks who advertise so freely in the lay press. Under the present system of gymnastic exercises in the army recruits are trained in physical exercises, being taken easily at first, as many of the young recruits on joining come to the ranks as inveterate cigarette-smokers and from a semi-starved condition of poverty in civil life. There are other important sections dealing with the care of the soldier in camp and on the march, with sanitary organisation in peace and in war, and with the prevalence of venereal disease in the army.

The book concludes with a chapter of examination questions which have been set for officers for promotion to the rank of captain in the subject of sanitation in its application to military life, the passing in which subject is now compulsory for all branches of the service. 126 such questions have been reprinted, and references are embodied as to where their respective answers may be found in the official manual on sanitation.

The book ought to prove of great value for junior officers and others interested in military hygiene.

Forensic Chemistry and Chemical Evidence. By WILLIAM JAGO, Fellow of the Institute of Chemistry, Fellow of the Chemical Society, of Lincoln's Inn, Barrister-at-Law. London: Stevens and Haynes. 1909. Pp. 256. Price 5*s.* net.

IT is somewhat surprising that chemical literature has not hitherto included a work on forensic chemistry. There are well-known works, of course, dealing with the analytical side of toxicology or of medical jurisprudence, and with the cases in court which arise out of the proceedings taken under the Sale of Food and Drugs Act, but until the publication of Mr. Jago's most interesting volume many questions which claim an equal attention at the hands of both the chemist and the lawyer have not been treated in a collective form. Mr. Jago's book will be of considerable help to the lawyer whose knowledge of chemistry is not a strong point, and to the chemist whose acquaintance with the procedure of the courts is not a very familiar one. The former will find in its pages a clear account of the way in which the latter arrives at his results, and the chemist will readily appreciate the plain observations which Mr. Jago makes (for he is both chemist and lawyer) upon the practical working of legal processes. The book contains eight chapters, and some idea of the ground they cover may be gained from their headings, which are as follows:—I., Introductory; II., Adulteration of Food; III., Adulteration of Drugs; IV., Use or Non-use of New Manufacturing Processes; V., Use of Preservatives and Colouring Matters; VI., More Important Criminal Matters; VII., Chemical Evidence in Civil Actions; and VIII., Practice. Throughout the author gives illustrative examples and cases, quoting many a *cause célèbre* connected with food and drug law, patent law, contracts, poisons, abortion, and so forth. These chapters one and all will be valued by those who are concerned to prepare and handle chemical evidence in a way acceptable to the courts and effective from the point of view of their side of the case. The book does not, of course, exhaust what is after all a very wide subject, but it relates to a very important portion of it, and the author deserves considerable praise for the excellent way with which he has dealt with that portion. We hope he will find it possible soon to issue an extension of a work which has been so well begun.

Personal Hygiene in Tropical and Subtropical Climates. By ISAAC WILLIAM BREWER, M.D. Philadelphia: F. A. Davis Company. 1908. Pp. 130. Price $1.00 net.

THIS little work has been written for the use of foreigners residing in the Philippines, Cuba, and other portions of the tropics. Although small in scope, the sojourner in the above tropical countries will find it to contain in a concise compass all the essentials appertaining to leading a healthy life in these regions. The author at the commencement rightly observes that the failure of the white races to colonise in the tropics is due not only to the heat and intense light met with, but also to the fact that the laws of hygiene have not been observed, and how to observe these laws is the purport of this work. The extent of the British Empire and the facilities of transit make it now probable that any medical man may be consulted as to the regulation of life in any latitude or longitude on the map, so that such information, if given precisely, will find a welcome.

Imprimis, the intending sojourner in the tropics must start in good health. He should be, of course, examined with regard to this by a physician, and amongst the points to be observed as especially important are the possession of good teeth and the absence of visual defects; the individual should be vaccinated before departure, which should be so timed as to enable him to reach the tropics in the most healthy season of the year. Individuals suffering from tuberculosis, disease of the stomach and intestines, and malaria are warned against entering that region.

The author then tells us what to take with us, and enters upon the important subject of work and exercise, the latter being especially necessary; he well points out that lack of exercise is a besetting sin in the tropics. We are glad to note in the remark concerning clothing that light woollen garments should be worn next the skin, and especially that the helmet should be lined with material of a scarlet colour to interrupt the chemical rays of light which have recently been shown to play their part in sunstroke. The subject of the water-supply is next considered, and the dangers of drinking impure water set forth, inducing, as it does, dysentery, cholera, enteric fever, and other diseases. Domestic purification of water is most satisfactorily carried out by boiling for at least 20 minutes, and the process must be supervised by the individual himself and not entrusted to any native servant, who will most probably scamp the work. A wise word of caution is uttered, "Under no circumstances should the boiled water be filtered," in view of the great danger of subsequent contamination in passing through the filter; if it be filtered this process must precede the boiling; and with reference to filters the Forbes sterilizer as used in the United States Army is well spoken of. Another important point is stated, namely, that cold shower baths are not adapted for use in the tropics—the water should be tepid. The subject of food next claims attention and the use of alcohol is considered, the author

advising that none should be taken except at meals, and then only to the amount of one to one and a half ounces per diem. The subjects of dwellings and the disposal of excreta are fully discussed, and as regards latrines, it is directed that each stool must be covered as soon as passed to prevent flies from carrying infection.

After these general remarks malaria and its connexion with mosquitoes are described; next yellow fever, in the prevention of which we owe everything to the Americans; filariasis, dengue, Malta fever, tetanus, dysentery, cholera, enteric fever, beri-beri, plague, tuberculosis, and the important subject of animal parasites; and the work concludes with a short account of the necessary points to be followed in the care of children. In an appendix there is given the treatment of some of the more common diseases met with in the tropics.

This little work, as we have shown, contains much valuable matter in a short space, and is strongly to be recommended to those about to visit the tropics. We have noticed only one important omission, and that is the recommendation of inoculation against enteric fever; this is important, as the evidence in its favour is by now very strong; we trust that in a future edition this omission will be rectified.

Outlines of Bacteriology (Technical and Agricultural). By DAVID ELLIS, Ph.D. Marburg, D.Sc. Lond., F.R.S.E., Lecturer on Bacteriology and Botany to the Glasgow and West of Scotland Technical College, Glasgow. London: Longmans, Green, and Co. 1909. Pp. 262. Price 7*s.* 6*d.* net.

THIS book is intended to serve as an introduction to bacteriology in all its branches, but, as we learn from the preface and subtitle of the work, special attention is directed to those subjects which are of technical or agricultural interest. The particular needs of the student of medicine are considered to a very slight extent, and the author chastens those who consider "bacteria" as "small organisms that breed disease" by pointing out that of some two thousand known species only about thirty are pathogenic to man. This part of the subject, together with the bacterial diseases of the vegetable kingdom, is disposed of in 14 pages.

In its general plan the book follows the lines of Dr. Newman's work on "Bacteria" but with less attention to matters of hygiene and rather more to certain technical processes. The early and more general chapters discuss the morphology and physiology of micro-organisms, and these subjects are dealt with in some detail and rather from the point of view of the systematic botanist. Naturally, also, since the book is intended for the use of a large variety of readers, many groups of organisms are considered which are not usually dealt with in the more restricted medical works. Amongst them are the sulphur and iron bacteria, the photogenic organisms, and the thermophilic and thermogenic groups. Somewhat special attention is devoted to the motility of micro-organisms, as the author's researches lead him to believe that organisms (cocci and bacteria) not usually considered motile can be rendered active by appropriate culture methods. The later part of the book deals with the practical applications of bacteriology, commencing with the subject of food preservation. The nitrogen-fixing and nitrifying organisms naturally occupy a prominent place, since they are of vital importance both to agriculture and to the modern methods for the disposal of sewage. In considering this subject certain researches by Paul G. Frankland are referred to; this seems to be a misprint for P. and G. Frankland. The ferments and fermentation processes which serve the practical purposes of the brewer, the distiller, the dairyman, the tanner, &c., are considered, and there is a short final section on sewage purification. Here there is a slip; the B. enteritidis of Gaertner does not ferment lactose.

The book appeals to, and will no doubt be of service to, a large circle of readers. It contains much generally accurate information. It seems to us, however, that the author has not quite decided whether he was writing a popular work or one designed for the serious scientific student, and his book is of more value as a source of information than as a means of education. It is very well printed on good paper and is of attractive appearance. There are a good many illustrations. Many of these are diagrammatic, but even in a diagram it is wise to draw to scale, as a representation of B. anthracis as a small organism compared with B. tuberculosis or the influenza bacillus is very misleading. The author constantly uses the form "flagellæ" as the plural of "flagellum."

An Introduction to the Study of the Comparative Anatomy of Animals. By GILBERT C. BOURNE, M.A., D.Sc., Linacre Professor of Comparative Anatomy in the University of Oxford. Second edition, revised. London: George Bell and Sons. 1909. Vol. I.: Animal Organisation; the Protozoa and Cœlenterata. Pp. 299. Price 6*s.*

To any of those, and unfortunately they seem to increase in number, who doubt the wisdom of including the elements of comparative anatomy as an essential subject of study for the medical student, we would recommend a perusal of this most excellent book by Professor Bourne. He has recognised that the majority of those who study comparative anatomy are destined for the medical profession, and has, as far as the regulations of examining bodies will allow, framed his work to serve as an introduction to the study of the most elementary forms of living matter. The present volume deals with animal organisation as represented by the frog, the protozoa, and the cœlenterata. The malarial parasite affords a most useful introduction to the study of pathogenic protozoa—a chapter which could not have been written nine years ago when the first edition of this work appeared. Progress of knowledge has also entailed a new account of the various changes which occur in the dividing and multiplying cell and in the maturation of the ovum and spermatozoon. The student is made familiar with the structure and the intracellular changes which are so obscure and difficult to follow in the cells of the mammalian body, but which have a diagrammatic representation in the simple unicellular organisations, The plan of the book and the accuracy of the text and figures make this an ideal text-book for medical students. On the whole we are in agreement as to the types which Professor Bourne has selected for the student's attention. In many ways the dog-fish has much in its organisation to recommend it as a typical vertebrate rather than the frog, but either type serves perfectly well. But it must also be recognised that the study of types, a form of study introduced and championed by Huxley, has also its disadvantages. The student does not obtain the conception of the animal kingdom as a whole and the relation of one form of life to another that was obtained by those of a past generation who were brought up on more systematic works. It is impossible to know all, and the selection made by Professor Bourne is as near the ideal as we may hope for.

LIBRARY TABLE.

Handbook of Diseases of the Rectum. By LOUIS J. HIRSCHMANN, M.D., Lecturer on Rectal Surgery and Clinical Professor of Proctology, Detroit College of Medicine; Proctologist, Harper Hospital, &c. With 147 illustrations, mostly original, including two coloured plates. St. Louis: C. V. Mosby Medical Book and Publishing Company. 1909.

Pp. 374. Price $4.—The recent increase in the number of books dealing with the diseases and surgery of the rectum is one of the most remarkable phenomena of modern medical literature. All acquainted with this branch of surgery will agree that up to very lately there was a lamentable lack of knowledge of this important group of diseases amongst a very large proportion of those recently qualified, and this must be attributed in no small degree to the lack of teaching which then existed at many medical schools. Unless there be a member of the hospital staff who specially devotes his attention to diseases of the rectum it is remarkable how little teaching there may be on this subject, and the average candidate at a final examination not uncommonly appears to imagine that hæmorrhoids, fistulæ, and malignant disease comprise the whole of the diseases of this region. Of late years the teaching and the specialised literature have greatly improved, so that now it is competent for any student or qualified practitioner to obtain a satisfactory knowledge of the subject. One of the most important effects of this has been an extension of the number of cases in which morbid conditions of the rectum can be treated under local anæsthesia in place of the employment of a general anæsthetic. This volume is intended primarily for the use of those who desire to deal with diseases of the rectum which do not require confinement to bed; in fact, for what is called in America "office practice." All other operations are omitted. We have tested the book and are satisfied that it contains much valuable material within the scope for which it is designed. The illustrations are numerous and useful. A chapter on Dysentery has been contributed by Dr. J. L. Jelks of Memphis, Tennessee; this is well written, but hardly seems to fall within the scope of the work.

Letts's Nurses' Report Book and Diary for 1910. London: Cassell and Co. Pp. 105. Price 2*s.*—This is a handy little book containing an almanack, certain information likely to be of use to nurses, pages ruled for the chief headings of a case report, and index, and a diary showing a week at an opening. It would make a useful little present for any nurse engaged in private work.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

(1) IODURASE; (2) BROMIASE; AND (3) LACTIMASE.

(ROBERTS AND CO., 76, NEW BOND-STREET, LONDON, W.)

(1) and (2) The association of bromides or iodides with yeast in therapeutics was suggested on account of the favourable action of yeasts in furunculosis, acne, and eczema. When ordinary beer yeast was administered to patients undergoing treatment with bromides or iodides the disagreeable effects known as "bromism" and "iodism" respectively were avoided. Acne, for example, was not manifested nor was there any appearance of mucous catarrh or gastro-intestinal disturbance. The bromides or the iodides are now therefore combined with a special yeast preparation known as levurine, the resulting compounds being known as iodurase and bromiase respectively, the particular combination being due to M. Couturieux. It is said that these compounds enable the administration to be made of quite large quantities of bromide or iodide without disagreeable results. (3) M. Couturieux has also prepared lactimase which contains in a dried state, as we have found, an active and healthy lactic ferment obtained by symbiotic cultivation of the lactic-acid bacillus of a special yeast endowed with marked phagocytic properties. The preparation is reported to give excellent results in the suppression of the microbes of putrefaction in the bowel. We found that lactimase produced lactic acid readily when sown in fresh milk kept at normal body temperature.

[WHITE CROSS MILK.

(THE BRITISH WHITE CROSS MILK CO., LIMITED, 34, NORTH-ROW, GROSVENOR-SQUARE, LONDON, W.)

An interesting departure in the methods of securing the distribution of a clean supply of milk, as well as of milk of standard quality, has been introduced by the above firm, and since great care is taken in the process the venture deserves to succeed. White Cross milk is a concentrated milk, the final product representing one-fourth of the volume of the original milk. The cream is first separated and in this process all dirt is eliminated. The skim-milk is then concentrated at a temperature of 140° F., during which process a current of filtered air is vigorously blown through it. This rapid current of air, of course, promotes evaporation. At the same time, the cream is similarly treated, but in a separate vessel. When the skim-milk has been reduced to one-fifth of its bulk and pasteurised the cream is returned to it in proportions according with the composition of cow's milk at the given concentration. The advantages of the process are that the concentrated milk keeps well, that it is of a definite and uniform composition, that it contains no pathogenic organisms, and finally presents a simple way of preparing milk of ordinary strength not wanting in any one of its various food elements. We have analysed the milk diluted according to directions, and the result is a milk particularly rich in fat and with a high value for total solids. It is somewhat difficult, however, to obtain a uniform sample for analysis on account of the rapid separation of the cream.

BREAD MADE FROM STONE-GROUND FLOUR.

(P. ZOLLER, 22, CARNABY-STREET, REGENT-STREET, LONDON, W.)

The loaf examined was excellent in regard to both texture and flavour. It possessed the peculiar clean flavour of bread which makes it an attractive article of diet. On analysis it showed as much as 9·26 per cent. of protein, which is considerably in excess of the amount usually found in bread. A tenth of its weight proved to be soluble in water, while the mineral matter amounted to 1·50 per cent. This bread will appeal favourably to all those who are concerned in the supply of an unimpoverished loaf—that is to say, of a loaf which possesses undiminished nutritious and digestive qualities and is pleasing to the palate.

POULAIN'S COCOA.

(H. VITRAC, GIRAUD AND CO., 12, IDOL-LANE, LONDON, E.C.)

This cocoa is remarkable for its solubility in the cup and its elegance of flavour. It is one of many examples supplied by the French of successful manufacture in regard to comestibles. Its solubility is due to some extent to the presence of an excess of mineral salts, the total mineral matter amounting to 7·45 per cent., which showed an alkalinity equivalent to 4·33 per cent. of potash. It is also very finely ground.

PIUTINOL.

(A. AND M. ZIMMERMANN, 3, LLOYD'S-AVENUE, LONDON, E.C.)

Piutinol is a clear, reddish-brown fluid containing pine oils and sulphur dissolved in alcohol and glycerine. With lead acetate it gives on heating a strong brownish-black precipitate due to the presence of sulphides. Piutinol gradually turns turbid and bright yellow when diluted with water owing to separation of sulphur. It is designed for application as a sulphur bath in the treatment of gout, rheumatism, and skin diseases. Evidence is quoted showing that a distinct absorption of sulphur takes place on immersion in a bath

containing piutinol. We may point out that piutinol may discolour certain glazes used in baths, and if the glaze happened to be an alkaline one it could not be cleaned with acid, as is suggested, owing to the destructive effect of the acid on the alkaline enamel.

ISHAM CALIFORNIA WATER.

(THE ISHAM CALIFORNIA WATER CO., LIMITED, ALBION HOUSE, NEW OXFORD-STREET, LONDON, W.C.)

The natural waters of Isham, San Diego, California, have recently attracted considerable attention on account of the benefits derived from their copious ingestion in cases of rheumatism, gout, and renal disorders. According to our analysis the water contains 68 grains per imperial gallon of mineral salts. These proved to consist chiefly of salts of lime, magnesium, and sodium in the form of carbonates and chlorides. It is probable that the water possesses marked diuretic properties, and therefore the free imbibition of it is likely to give relief in uric acid diatheses.

GERIL BREAD.

(J. ALLMANN, 9, CULLUM-STREET, FENCHURCH-STREET, LONDON, E.C.)

This bread is recommended on account of its laxative properties. It shows a very rough texture and contains a considerable amount of fibre. It resembles, in short, whole rye bread, and gives results on analysis which agree with those obtained with that substance. As much as 20 per cent. of the bread is soluble in cold water, and the solution contains reducing sugars. We have seen reports which testify to its value in constipation. The bread keeps moist for a considerable time and is supplied in sealed tins.

TABLOID THYROID GLAND (STANDARDISED).

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

It is an obvious advantage to employ thyroid gland substance which has been standardised by chemical means controlled by physiological tests. The tabloid thyroid gland is stated to contain not less than 0·2 per cent. of iodine in organic combination; we have put this statement to the test and as the result of our analysis we obtained the figure of 0·32 per cent. calculated on the desiccated gland as the mean figure of three determinations. We are informed that special care is taken that the tabloid thyroid gland shall represent the whole substance of carefully selected healthy glands of the sheep, containing the essential activity of the normal thyroid gland unaltered and undiminished.

CYDER (WOODBINE BLEND).

(H. WHITEWAY AND CO., LIMITED, THE ORCHARDS, WHIMPLE, DEVON.)

When cyder is sound there can be little doubt that it affords a wholesome beverage, but it must be sound. Rule-of-thumb processes for its production are now happily disappearing, with the result that a uniform sound product is produced by those manufacturers who adopt progressive methods. Amongst the cyders which are of distinct merit and which may be trusted for their soundness of condition are those produced in the orchards at Whimple in Devonshire. They are interesting to the palate and are clean, dry beverages, with no other acidity than that normally due to the acid of the apple itself. The reputation which cyder has as a beverage suitable for, if not helpful to, gouty patients has some foundation in fact. It is well known, at all events, that the acid salts in cyder metabolise into alkaline salts in the body, and therefore cyder, if it be sound, is an alkaliser of the blood. Our analysis of the Woodbine blend is as follows: alcohol by volume, 6·55 per cent.; extractives, 2·225 per cent.; sugar, 0·91 per cent.; mineral matter, 0·10 per cent.; and malic acid, 0·201 per cent. It will be seen that the sample contains a minimum of sugar, of alcohol, and of extractives. It is neither syrupy nor sour and belongs to the light delicate class of cyder.

COLOUR-BLINDNESS.

THE CASE OF MR. TRATTLES.

THE case of Mr. Trattles, which has recently been tried by a court specially constituted by the Board of Trade, is of such far-reaching importance that it is desirable to bring a comprehensive report to the notice of the readers of THE LANCET.

The chief points in the history which leads up to the final inquiry just concluded are as follows. In February, 1904, Mr. John Trattles, then an ordinary seaman, presented himself for examination for the certificate of second mate. He passed the examination, including the colour vision test, and was granted his certificate. In July, 1905, he went up for examination as first mate and failed in the colour vision test. He appealed and was specially examined by Sir William Abney and Captain Harvey and again failed. In September, 1905, having refused to surrender his certificate as second mate, a local marine board was called to inquire into his competency. The board found that he was not incompetent to hold his certificate by reason of colour-blindness. In May, 1906, he was examined for a certificate of competency as first mate; he passed his examination, including the sight test. The Board of Trade was not satisfied, and he was offered and accepted a special examination by Sir William Abney and Captain Harvey. It took place in May, 1909; he again failed to pass the colour vision test. As Mr. Trattles still declined voluntarily to surrender his second mate's certificate a special court was constituted to investigate the case by the Board of Trade under the Merchant Shipping Act. The President of the Board of Trade nominated Sir Francis Mowatt president of the court, with Mr. J. Dickinson, stipendiary magistrate, as legal assessor.

At the examination in May, 1909, certain scientific bodies were invited to send representatives to witness the tests. Mr. Trattles was not the only candidate examined, and the representatives were not informed that there was any likelihood of their evidence being invited with regard to any individual case. Dr. W. H. Rivers, F.R.S., and Mr. J. Herbert Parsons, F.R.C.S., were present, representing the Royal Society and the Ophthalmological Society respectively. Mr. Trattles was tested by Holmgren's wools and by various spectroscopic tests, including the method with colour patches and that of simultaneous contrast. The inquiry before the special court commenced on Dec. 2nd, 1909, at the Imperial College of Science and Technology, South Kensington. Sir William Abney was examined at length. He said that Mr. Trattles was red-blind. He explained the nature of the defect and described the methods of examination. Dr. Rivers described Mr. Trattles as being red-green blind, explaining that this was a mere difference in terminology, as he agreed in all the facts of the case with Sir William Abney. Mr. Herbert Parsons confirmed the opinion expressed by the previous witnesses. Confirmatory evidence was supplied by Captain Harvey, Captain Fulton, his nautical assistant, and Fleet-Surgeon Prynn, R.N., who examines recruits for the navy in colour vision. Mr. Trattles was invited to submit to examination by Sir William Abney before the court. His counsel submitted that if he agreed it was only fair that he should be allowed to demonstrate his competency by a practical test carried out under ordinary nautical conditions at night. Sir William Abney demonstrated his methods before the court. He said: "I am only showing you the methods (of my examination), and I was not proposing to base a report on this public examination. If I had occasion to examine Mr. Trattles it would be in the laboratory with a more refined apparatus."

As regards the two previous examinations, which were held in his own laboratory, and in conditions with which he was entirely satisfied, he said that the tests and the results obtained in each case were as follows: 1. Trattles confused a white light with a bluish-green colour, and this showed that he was colour-blind. 2. When a darkish red light was placed beside white of the same brightness Trattles said that the white was brightest, and when the white was diminished to a faint glimmer he said they about matched. This showed at once that he was red-blind. 3. When a white light was superimposed on red he frequently called it green, or in the case of extreme red he would call it white. This showed absolutely that he was red-blind.

Mr. Trattles's witnesses included himself; Captain Peel, marine surveyor, holding an extra master's certificate; Captain Way, marine surveyor, holding pilot's certificates; and Captain Toms, retired master mariner, formerly a member of the Advisory Committee of the Board of Trade. Mr. Trattles as an A.B. acted regularly as a look-out man, and as a mate always took one of the night watches. Since 1905 he must have been in charge of the vessel on some 1200 nights. During that time he never had an accident, nor, so far as could be known, did he make any mistake. His experiences included navigation in the North Sea, the Baltic, the Channel, the Atlantic, the Mediterranean, and the Black Sea. His witnesses had separately taken him up and down the Mersey at night. The examination by Captain Peel was on a dark night, with moonlight; that of Captain Way on an ordinary night after the moon had risen. They were unanimous in declaring that Trattles made no mistake throughout the whole of the examination and that he appeared to be rather above the average in the range of his vision.

Sir Francis Mowatt consented to allow a practical test in the presence of representatives of the Board of Trade. The Trinity House Brethren were consulted, and they nominated Commander Wilson-Barker, R.N.R., to conduct such an examination. They were also good enough to place one of their steamers at the disposal of the court for the purpose.

The examination took place on the evening of Dec. 30th and there were present Mr. Dickinson, representatives of the Board of Trade, Trattles's solicitor, and one other person selected by him. The question referred to Commander Wilson-Barker was whether he considered Trattles competent in respect of colour vision to discharge the duties of mate, and he was authorised, if what he saw on the first night did not enable him to arrive at a definite conclusion, to continue his examination on subsequent nights.

Commander Wilson-Barker reports that the evening on which the examination took place was "calm with some haze on the horizon, but that later on the sky became cloudy and the horizon clearer; the evening was dark and the conditions most favourable for the tests, as any deficiency in colour vision would have been accentuated by the slight haze prevailing." "Trattles had no difficulty whatever," reported Commander Wilson-Barker, "in picking up the lights. He had vision of a quality equal to that of myself and of the look-out man, and he gave me a number of different lights which he distinguished accurately and without difficulty."

The Commander instanced two tests to which he attached special importance. They were: 1. On approaching the Nore Light at some distance off Trattles hesitated, questioning if it was not a reddish light. He was correct, the light being a new white light in which some ruby rays are retained as an experiment in penetrating the fog. 2. Trattles was asked to describe the colour of two stars which the Commander pointed out to him from the deck: he did not recognise them, but he correctly described one of them (Mars) as reddish.

Another witness called on Trattles's behalf was Captain Townsend of the *Kingfield*, with whom he had sailed as second officer continually since October, 1905. This evidence is of importance, and should be stated in some detail. The captain had been informed of Trattles's failure to pass the sight test in the previous July, and he stated that this knowledge had caused him a deal of uneasiness at first. "My life," Captain Townsend said, "and the crew's lives are at stake when he is on the bridge if this suggestion is true. I tested him. When the look-out man sang out a light I used to ask Trattles what light is it, and before he answered I would examine it through my binocular. In my experience, and under all conditions of weather, that man never made a mistake. The vessel was engaged in the Black Sea, the River Plate, and different trades, and Trattles during that time has been in the most difficult navigation in the world—the Channel, the Bay, the Mediterranean, and the Black Sea."

Sir Francis Mowatt, in the course of his judgment said: I next come to the experiments which Sir William conducted in my presence, and which were on the same line as those above described. In some instances I found them difficult to follow, and I was precluded from asking questions since they and their answers might have assisted Trattles to guess. I should add that the shorthand notes, taken under great difficulties and in complete darkness, do not in every instance agree with my own impressions. I gathered that when a white, a red, or a green light of the colour, size, and brightness of a ship or coast light was shown upon the screen Trattles distinguished it correctly. When two or more lights were rapidly varied or superimposed one upon the other he became confused and made some mistakes as between green and red, but these were to some extent explained by the constant flickering and variation of the light, which made it difficult to distinguish the lighter shade. Moreover, the questions were not always put very clearly to the witness, who was in a state of some nervous excitement, and occasionally failed to understand them. Nevertheless, as I have said, the tests applied show clearly that Trattles's colour vision was defective.

Finally, as to the wool test. Out of a large heap of wool skeins of different colours Trattles was shown in succession skeins of light green, pink, red, purple, and yellow (their colours not being mentioned), and he was told to select from the heap skeins of corresponding colours and of various shades of those colours. He picked them out with deliberation, and frequently with hesitation. Some he examined carefully before selecting or rejecting them. The following are the results:—

Green.—He picked seven green (two almost blue) and two browns.

Pinks.—He picked nine pinks, of which two were so dark as to be almost a brown red.

Reds.—He picked seven reds, one almost pink.

Yellows.—He picked six yellows, one almost a light green.

Purples.—He picked four purples and one blue-green.

On being shown the purple Trattles said that colour was never used at sea.

As in the case of the spectrum examination, the test clearly showed that Trattles had a defective colour vision, but I do not think that the selection of wools by daylight, as I saw the test applied, affords a conclusive test of a man's ability to pick up lights at night under the open sky, or to distinguish between the three colours in use at sea.

In conclusion he says: On a very careful consideration of this evidence I have come to the conclusion that Trattles is not incompetent from colour-blindness to discharge the duties of a mate, and I direct that his certificate as second mate be returned to him.

THE JOHN HERBERT WELLS FUND.

THE following is the twelfth list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this office:—

	£	s.	d.		£	s.	d.
Dr. J. N. Kilner	10	0	0	Mr. J. E. Williams... ...	1	1	0
Mrs. F. Hartmann	5	0	0	H. A. T. F.	1	1	0
Dr. Frank Hathaway ...	2	2	0	Dr. E. H. Addenbrooke...	1	1	0

ADAMS *v.* POMEROY.

OVER £75 have now been collected for this Fund. It is confidently hoped that the small sum still required (£25) will be given quickly so that the Fund may be closed without longer delay. Contributions will be gratefully acknowledged by the honorary secretary, Dr. L. Garrett Anderson, 114A, Harley-street, London, W. During last week the following donations were received:—

	£	s.	d.		£	s.	d.
Dr. Amy Sheppard... ...	1	0	0	Dr. David Lawson, Banchory	1	1	0
A. M.	1	0	0		£11	5	0
Anonymous subscriptions	6	12	6	Already acknowledged ...	64	1	6
Dr. McNeill, Wolverhampton...	0	10	6				
Dr. D. J. Robertson, Oldham	1	1	0	Total sum received	£75	6	6

THE LANCET.

LONDON: SATURDAY, JANUARY 29, 1910.

Report of the Medical Officer of the Local Government Board for 1908-09: Interesting Figures.

THE most noteworthy feature of this report is that it takes a broader and more comprehensive view of preventive medicine than has hitherto been the case. An investigation into the prevalence of hernia is not a subject which, so far as we are aware, has up to the present attracted much attention from medical officers of health, but this fact is in itself obviously no justification for abstaining from consideration of a condition which, especially in certain age groups and among certain classes, is responsible for a large amount of disability and inefficiency; and preventive medicine liberally interpreted has as much concern with the production of efficiency as it has with the prevention and limitation of a few communicable diseases; and this is surely the whole spirit of the most recent development of preventive medicine—the medical inspection of school children. Dr. ARTHUR NEWSHOLME, the principal medical officer to the Local Government Board, in his introduction to the report makes some very interesting observations upon the general death-rates of different sections of the community, and he prefaces his comments by pointing out the inconvenience which arises from the fact that the annual reports of the Registrar-General do not furnish the vital statistics for separate sanitary areas, those for registration counties and districts being alone given, and it is but rarely that the registration and sanitary areas coincide with one another. We have pointed out recently, in reviewing the report of the new Registrar-General for 1908, that Mr. BERNARD MALLET thinks it may in future be possible, except as regards the smaller districts, to redistribute the returns according to administrative areas, as the area of collection does not necessarily govern that of presentation.[1]

Dr. NEWSHOLME takes for consideration the provisional statistics which are contained in the Registrar-General's annual summary and which relate to 29 metropolitan boroughs, 76 large towns, and 142 smaller towns. Although these statistics relate to only 247 out of 1789, in so far as districts are concerned, they have reference in the matter of population to more than 21,000,000 of the total 35,000,000 which England and Wales were estimated to comprise in 1908. Over 16,000,000 of the total 21,000,000 spend their lives under the conditions which obtain in the 76 great towns, inclusive of the metropolis, which have each a population of over 50,000, while the remainder live in 142 smaller towns with populations ranging from 20,000 to 50,000. The general death-rate during 1908 of the country as a whole was 14·7 per 1000, while the death-rate (corrected for age and sex distribution) per 1000 of population in each instance of the 76 great towns, with London, was 15·8; of the 142 smaller towns 14·7; and among the 14,000,000 people living in the smaller urban and in the rural districts it was 13·8.[2] Having given these figures Dr. NEWSHOLME draws attention to the disparities in the death-rates amongst the 21,000,000 comprised in the metropolis and in the 217 provincial towns already referred to. Of these, 2 per cent. (about 398,000) had a death-rate—per 1000 in each case—under 10; 16·8 per cent. of 10·0 to 12·5; 33·5 per cent. of 12·5 to 15·0; 29·4 per cent. of 15·0 to 17; 18·3 per cent. of 17·5 to 20·0; and 0·3 per cent. of over 20. It is then pointed out that had the towns referred to had a death-rate of 13·8 per 1000, which was the average death-rate of the 14,000,000 people living under the conditions existing in the remainder of England and Wales, the total number of deaths in the country for 1908 would have been 33,831 fewer than was actually the case. Dr. NEWSHOLME regards this saving of life as attainable, and he draws attention to the fact that the death-rate in towns of very various sizes and having together a population of over 4,000,000 was under 12·5 per 1000. It is an admirable notion to put a concrete view of this sort before the public, and the ideal suggested raises most interesting issues as to practicability and cost. We shall doubtless see the subject discussed in fuller detail in subsequent annual reports, and a differential analysis will be made of all the causes of death in the several groups alluded to. It is important to remember that the figures are already corrected for age and sex distribution, and thus that one important statistical fallacy has been removed. The difficulty in the fascinating study of death-rates is to ascertain to what extent the differences are due to purely social conditions and to what extent they are attributable to conditions which may be fairly regarded as within the scope of public health. Probably it will be found practicable to study the precise conditions existing in certain typical towns of each class by way of securing some sort of standard data; while as regards distinction between purely social and purely public health influences is it not impossible to draw any hard and fast lines, for are not these factors inextricably bound up with one another? But is it not true also that among the most potent social forces of the present day is that which is exercised through the agency of sanitary reform?

Dr. NEWSHOLME makes a somewhat similar comparison with reference to infantile mortality-rates, and, dealing with the same populations as before, he shows that 6·2 per cent. had an infantile mortality per 1000 births of 90; 9 per cent. of 90 to 100; 12·7 per cent. of 100 to 110; 8·8 per cent. of 110 to 120; 11·6 per cent. of 120 to 130; 15·5 per cent. of 130 to 140; 20·3 per cent. of 140 to 150; and 15·9 per cent. of over 150; and he draws attention to the fact that if the same

[1] THE LANCET, Jan. 1st, 1910, p. 3.

[2] Compare provisional figures for 1909 on p. 326.

rate of infantile mortality as obtained in the rest of this country prevailed amongst the 21,000,000 to which the above figures relate there would have been 9959 fewer deaths than actually occurred. That the high infantile mortality which at present exists in many parts of the country can be very substantially reduced is a question which admits of no doubt whatever; and the work of Dr. E. W. HOPE, who found in Liverpool that the *personnel* of the parents was a very dominant factor in promoting or reducing infantile mortality, holds out promises in this direction. The Notification of Births Act—a measure which the medical profession can, for obvious reasons, be only half pleased with—and the systematic employment of tactful and well-trained health visitors, will assist in the performance of these promises. And as to both these points, the report before us contains some instructive details. Of the total population of 21,000,000 dealt with above, districts comprising a population of nearly 13,000,000 have already adopted the statute in question, and in those districts which have done so there are at work some 115 health visitors. In the near future this number will no doubt undergo great expansion, more especially as, through the teaching of hygiene in schools and the work of medical inspection, the enormous importance of preventive medicine becomes more fully realised by the public.

We refer now only to one more point dealt with by Dr. NEWSHOLME in his interesting report, and that is the manner in which enteric fever has behaved in Nottingham and Leicester respectively, for most important general lessons can be drawn from this comparison. Both towns some years ago possessed two features in common: a conserving system of excrement disposal and a high death-rate from enteric fever. Nottingham has made but slow progress in the adoption of the water-carriage system; in Leicester the progress has been rapid. As regards enteric fever, the death-rate in Nottingham is still high, while that in Leicester has undergone a very marked diminution. Dr. PHILIP BOOBBYER, the medical officer of health of Nottingham, has for many years past drawn attention to the association between enteric fever and houses furnished with midden-privies or pail-closets as compared with those supplied with water-closets, but his appeals have met with only a very partial response; and as to the history of these two towns Dr. NEWSHOLME writes: "A gigantic experiment has been performed on these two communities under circumstances which enable fairly trustworthy comparison to be made; and at the present time it remains, then, that in Nottingham a large number of deaths from diarrhœa and from enteric fever are occurring year by year which would cease to occur were this city in every part of it to adopt, like Leicester, a more cleanly system of disposal of excremental matter." We are glad to hear that during 1908 the Local Government Board communicated with various urban sanitary authorities urging them to use the powers which they possess for the conversion of conservancy systems into water-carriage systems; and in next year's report we are promised some valuable data as to the rapidity of conversion which has taken place in different towns. Many other matters of interest in the report will be discussed further in our columns.

The Difficulties of Dispensing.

AT the conclusion of an inquest held on Jan. 4th at Fulham the jury asked the coroner to lay the facts of the case before the notice of the Home Secretary, "in order that legislation providing for a distinctive form of bottle might be brought about." Regulations as to the methods of storing and dispensing poisons have been in existence more than 40 years. They were framed by the Pharmaceutical Society, with the consent of the Privy Council, and under an Act of Parliament it is an offence to fail to comply with those regulations. The regulations are in all cases applicable to the shops of dispensing chemists, but not to all medical practitioners of medicine who may happen to dispense drugs. For Section XVI. of the Pharmacy Act, 1868, as all our readers know, exempts from the first 15 sections of the Act any "legally qualified apothecary," while shortly after this Act was passed, the question having been raised whether medical practitioners other than Licentiates of the Society of Apothecaries were comprehended by these words, in order to make the matter perfectly clear, an amending Bill was introduced into Parliament and passed in 1869. The introduction of this Bill was mainly due to THE LANCET, and its provisions specifically exempted all medical practitioners registered at the time of the passing of the Act, and those registered subsequently, who in order to obtain diplomas shall have passed an examination in pharmacy. It is clear, therefore, that those practitioners are exempted from the provisions of this Act who are Licentiates of the Society of Apothecaries, who became registered before August 11th, 1869, or who have become registered since that date but have passed an examination in pharmacy. There are comparatively few practitioners who dispense their own medicines who have not passed such an examination.

There are therefore few practitioners amenable to the restrictions of the Pharmacy Act; but this fact in no way lessens the obligation of medical men who dispense to carry out the same methods of safety to the public as if that Act was obligatory upon them. All poisons should be properly stored and bottled, and no poisonous preparations for external use should be issued to patients in any but proper poison bottles. But if the law imposes little "legal" responsibility on practitioners in the important matter of dispensing poisons, it imposes none in the more difficult and responsible duty of writing prescriptions. And while the medical man has direct responsibilities with regard to dispensing, he has also indirect ones of equal importance. He has to prescribe many poisons, and it is his duty to do so with all care and attention. Though there are traditional methods and forms for writing prescriptions, the former have become of late years too much neglected and the latter too much abbreviated. We received some time ago a paper upon the subject from Mr. DONALD MCEWAN, read by him before the Pharmaceutical Society of Great Britain, containing many points bearing on this very situation upon which comment may be useful to our readers. The relationship between the prescriber of a formula and its dispenser should never produce any difficulty, but it is

obvious that occasionally this does happen, and the question arises first what ought the dispenser to do. As an example, if an unusually large dose of some drug is ordered without any statement or indication that the dose is unusual, should the dispenser merely take a careful note of the prescription, with a special comment, dispense the drug as ordered, and await what may prove to be a catastrophe? Undoubtedly, if possible, the druggist should communicate with the prescriber, even at the risk of exciting suspicion in the mind of the patient or his friends, for it is unquestionable that the prescriber should indicate in some way that he has a good reason for ordering an unusual dose. This may be done in various ways, as by underlining the drug and dose, or by adding "(*sic*)" in brackets or by a footnote. It would undoubtedly be better if some uniform practice in this respect were adopted, and no better method could be employed than a short footnote. The dispenser may not be able to communicate with the physician—he may not even know the latter's name. Many prescriptions are only signed with initials, and have no address stating where the prescriber lives. Both these omissions ought to be avoided; all prescriptions should, in our opinion, be signed in full and the address of the signer given, unless the paper bears the patient's address, when, of course, the prescriber can be readily traced.

All pharmacists will probably agree with us that when it is absolutely necessary to modify a prescription the dispenser should exercise his own judgment in doing so, but that he should, if possible, communicate with the writer of it. We think that in most cases the medical practitioner will welcome this attention to his interests rather than resent it as an interference. The prescriber should remember that the pharmacist who refers back a prescription is following a safe and prudent course in the interests of everyone concerned. The discretion of the dispenser must, however, be carefully restricted, and there is no doubt that this point is clearly and honourably recognised by pharmacists. On the other hand, all medical practitioners should recognise with equal force the fact that the responsibility for a prescription rests ultimately with them, and that if a prescription presents doubt or difficulty that doubt or difficulty should be cleared up at the time of writing the prescription. Serious mistakes in prescriptions are rare, but possibly no one is such a good judge of their frequency as the dispensing chemist, who is usually a discreet person and holds his tongue. In Mr. MCEWAN'S paper is a collection of instances which have come under his personal cognisance, and certainly do not reflect great credit on the devisers of the prescriptions; but these instances are not sufficiently numerous to be alarming, though individually they would cause embarrassment when they occurred. We can only repeat what we have said above—the responsibility of prescribing is a very serious one, and no practitioner should ever forget this. Hurry and flurry when prescribing should be avoided, and carelessness is a crime.

THE WATER-SUPPLY OF WARMINSTER (WILTS).—The new water-supply for Warminster was formally opened on Jan. 20th in the presence of a large gathering.

Colour-Blindness and the Board of Trade.

FOR long past there has been agitation in the medical world against the methods adopted by the Board of Trade in the examination in colour vision of candidates for certificates as master or mate in the Mercantile Marine. Most of the strictures have been passed upon the scientific methods adopted. Whether these are fundamentally erroneous or are wrongly applied may be left out of discussion for the moment. The case of Mr. JOHN TRATTLES, of which we give an account in the present issue of THE LANCET, proves conclusively that there is serious fault somewhere. Mr. TRATTLES is a seaman of exceptional ability, who has proved his superior capacity in the technical details of his profession by passing the examinations for second and first mate after serving in the forecastle as an ordinary sailor. His colour-vision has been examined on six occasions during the last six years; on three occasions he passed and on three occasions he failed. As the *Shipping Gazette*[1] says: "Any system which keeps a man on tenterhooks for four years as to whether he will be flung out of his profession and made to join the crowd that loafs on the Thames Embankment stands wholly condemned. We clearly ought not to fling a man about from tribunal to tribunal, until, declaring him first to be colour-blind, then to be otherwise, and then to be colour-blind again, we run the risk of throwing him off his mental balance altogether." The *Shipping Gazette* goes on to discuss, or rather to ridicule in highly sarcastic fashion, the scientific evidence given by Sir WILLIAM ABNEY and others before the special court. It accepts as infallible Sir FRANCIS MOWATT'S opinion that the selection of wools by daylight, as he saw the test applied, does not afford a conclusive test. It records its respect for the lantern test if properly applied, but not for Sir WILLIAM ABNEY'S method of application. Much stress is naturally laid upon the "practical test" conducted by Commander WILSON-BARKER. We should have thought that the expense of this test might have been avoided in the face of the overwhelming evidence that Mr. TRATTLES had for many years acted as look-out man and second mate without mishap. As those competent to judge realise quite well, such a test is of no value unless carried out in atmospheric conditions which would render it highly dangerous to many lives. The *Shipping Gazette* draws two conclusions from the inquiry. One is that it "sounds the death-knell of the vicious system of wool-testing, even in its 'improved' form." The other is that "the whole question of sight-testing must be put on a higher plane." The first conclusion is controversial and need not be discussed at present. With the gist of the second we are in cordial agreement, though we think that it will be found that the weak spot is rather the system of examination and the mode in which it is conducted than the actual tests themselves. The *Shipping Gazette* very rightly says: "What is obviously a medical subject must, at least to some extent, be regarded as such. Mr. CHURCHILL admits that no oculist or medical man is included among the officers conducting these tests."

[1] Shipping Gazette and Lloyds' List, Jan. 12th, 1910

The subject is one of far greater difficulty and complexity than the *Shipping Gazette* and laymen in general realise, but the feeling must be unanimous that in so serious a question, involving the safety of numberless lives, the present anomalies cannot be permitted to endure. Like so many physiological problems, those presented by colour-blindness demand an extensive knowledge of physical facts, and it is imperative that those who conduct the examinations, whether primarily physiologists or physicists, must have acquired that competent knowledge of physiology and physics which is more likely to be found in the physiologist than in the physicist, but even then only after the devotion of special study to the particular subject. In our opinion the whole question should be referred to a Royal Commission or to a committee of the Royal Society, upon which physiologists and ophthalmologists who have given special attention to the subject should be adequately represented. Among the duties of such a committee would be the re-investigation of tests for colour-blindness with a view to selecting those most appropriate to the end in view, and the reorganisation of the examinations to ensure the efficient carrying out of the tests. It would then be seldom, if ever, necessary to have recourse to a court of law to adjudicate on what is a purely scientific question.

Annotations.

"Ne quid nimis."

THE RESEARCH DEFENCE SOCIETY.

WE publish in another column a letter signed by Lord Cromer, the Hon. Sydney Holland, Dr. F. M. Sandwith, and Mr. Stephen Paget, respectively President, chairman of committee, honorary treasurer, and honorary secretary of the Research Defence Society, which sets out briefly the work accomplished by the society during the past 12 months. We hope the medical profession will read this studiously moderate communication, for it proves the established position of the society and its activity in the defence of scientific workers upon whose efforts much of our medical progress will depend in the future, as it has depended in the past. We know from frequent communications which we receive on the subject that members of the medical profession deeply resent the accusations of cruelty which are brought against many of those engaged in scientific research. All these should support the Research Defence Society by their subscriptions, and use their voices among their patients to increase the large number of persons, medical and lay, who are resolved to defend the cause of science from the malice or inaccuracy of the faddist, never more difficult to deal with than when reinforced by the amiable convictions of the humane sentimentalist.

ACCIDENTS IN FACTORIES AND WORKSHOPS.

AT the meeting of the Royal Statistical Society on Jan. 18th a paper was read by Mr. H. Verney, one of H.M. factory inspectors, on the reported accidents involving fatal or bodily injury to workers in factories and workshops. It appears from a table in the appendix to the annual report of the chief inspector of factories for the year 1907 that the annual reported number of this class of accidents increased from 8211 in 1890 to 124,325 in 1907; of the latter number 1179 were fatal accidents. The main object of the paper was to throw light on this startling increase in the number of those reported accidents during the 18 years dealt with in this table. It was pointed out that the provisions dealing with such accidents in the Factory Acts of 1891, 1895, and 1906 were far more comprehensive than those in the preceding Act of 1878. Not only were many additional non-fatal classes of accidents made reportable by the more recent Acts, but reports were also, for the first time, required from the occupiers of docks, wharves, quays, warehouses, and certain laundries; the reporting of such accidents was also made compulsory on the occupiers of factories, workshops, &c., with liability to penalty for omission to report. The number of factory inspectors was increased, moreover, from 88 in 1894 to 200 in 1908, and prosecutions for failure to notify accidents were frequently instituted throughout the period under notice. The increasing liberality and general extension of the provisions in successive Workmen's Compensation Acts, more especially in the Act of 1897, have without doubt also greatly tended to increase the number of reported accidents. During the period under review there was, too, a marked increase of activity in trade, and of both the number and the proportion of the population exposed to risk of accident in factories, workshops, &c., through the decline of home industries and the substitution of machine for hand labour. These were some of the causes referred to in Mr. Verney's paper in explanation of the great increase in the number of reported accidents in factories and workshops between 1890 and 1907. If these several causes do not entirely account for the increase of reported accidents, it is at any rate obvious that the official crude figures, which served as the basis of this paper, should not be accepted as affording trustworthy evidence of real increase in the proportional number of preventable accidents, and still less of any increasing neglect of due care for the safety of workers in factories and workshops.

A MEDICAL EXAMINER IN PHYSICS.

THE coördination of the pre-clinical and clinical studies of the medical curriculum is the order of a day which is in revolt against the multiplication of special studies in our medical schools. When it has been finally decided that the student cannot be turned into a complete chemist, physicist, biologist, pharmacist, anatomist, physiologist, obstetrician, physician, and surgeon within the space of five years, the question at once is raised whether it is desirable that the preliminary subjects should be taught by specialists, each convinced of the supreme virtue of his own particular brand of "leather," or whether they should be handed over to practitioners of medicine having special knowledge of one or other of the preliminary studies and able to judge of its application to the main business of the medical student's labours. Not so very many years ago it was almost the invariable custom at the hospital schools for one of the physicians to take charge of the physiological department in the same way as in most schools the study of anatomy is still presided over by one of the surgeons, although in the universities the professors of anatomy and physiology have usually specialised exclusively in their own sciences. The advantage of using the special teacher with full knowledge of his subject, able to demonstrate the principles of that subject with assurance and a ripe faculty of illustration, is very considerable, but the old plan of science teaching by men actively engaged in clinical work had its merits. The advantages of such teaching must at any rate be very great when it is given by a practitioner really competent to undertake it, and knowing at first hand the exact principles which will have most bearing upon the after-studies of the men under his charge. But there

is a middle way by which an active practitioner of medicine may influence the preliminary studies without actually teaching them, and that is by examining students in them. This excellent middle way, we are interested to see, is to be put into practice in Edinburgh in the subject of physics. Dr. Dawson Turner has been appointed an examiner in medical physics in Edinburgh, where one examiner has hitherto examined in experimental physics for degrees in arts, science, and medicine. To examine is not the same thing as to teach, but we think that Dr. Turner's appointment is a compromise which those who would like to see a return to the old system may view with pleasure, for where examiners lead teachers are bound to follow, so that the innovation is one which may have a very salutary influence upon the physics classes for students in the Edinburgh Medical School. Doubtless, the General Medical Council will watch the experiment, and should it prove successful the Council may think well to consider whether the examining boards for the preliminary sciences in this country might not be strengthened by the addition of medical assessors, if not of actual medical examiners, who would veto the setting of certain questions such as have before now most unfairly tried our medical students.

PIPE, CIGARETTE, AND CIGAR.

THE question as to which of the three forms of smoking, the pipe, the cigarette, or the cigar, introduces the greatest proportion of nicotine into the smoker's system has never obtained a completely decisive answer, although it has received considerable discussion from time to time. At one time it was freely asserted that the tobacco which contained the highest amount of nicotine necessarily tended to be the most injurious, no matter in what form it was smoked, but we now know that the form of smoking plays an important part. There was a theory that not in all three cases was the original nicotine in the tobacco conveyed as such to the mouth; sometimes it was destroyed by effective combustion, while at other times pyridine was responsible for toxic effects. According to this theory, which was all on the right track, the cigarette was least harmful, because the tobacco along the thin paper wrapper was exposed freely to the air, and as a consequence the tobacco was well burnt and all nicotine was destroyed. Against this it was held that in such a case one poison disappeared only for another one to be elaborated, and carbon monoxide was found in marked quantity as a poisonous constituent of cigarette smoke. As a matter of fact, carbon monoxide is invariably found in all tobacco smoke, and that circumstance should be sufficient to warn all smokers against inhaling it persistently. Theories as to what happens in the combustion of tobacco in the various ways it is smoked next took into account the extent to which condensation products were formed and retained in the tobacco. The most effective condenser, of course, is the pipe, and there can be little doubt that owing to the length of the stem a comparatively small proportion of these condensation products reaches the mouth. In the cigar, on the contrary, the condensing process has a tendency to travel throughout the cigar; at all events, as the cigar gets shorter the condensed product area gradually reaches the mouth and eventually the products are conveyed there by the heat of the burning end. It has been said by connoisseurs that no cigar is worth smoking after one-half of it has been consumed, which seems to be a practical realisation of theoretical considerations very suitable for application by millionaires. Again, a cigar that has been partially smoked and then allowed to go out is decidedly unpleasant when re-lit, owing doubtless to the spread of condensation products to the mouth end. In the case of the pipe, the burning area is always in the same place; it never comes nearer the mouth, and therefore the probability is that the condensation products do not reach the mouth in, at any rate, appreciable quantities. In the cigarette the condensation products eventually reach the mouth, but there is in this case less chance of condensation products forming since the combustion is unhampered, the tobacco being freely in contact with the air. The question of moisture, however, must not be left out in these considerations, for it is obvious that damp tobacco will form condensation products more readily than dry tobacco. It is probable therefore that a dry cigar or cigarette gives off less poisonous products than a damp one does, but not everyone smokes from choice a new cigar or an old cigarette. It is reasonable to conclude that the amount of nicotine reaching the mouth does not necessarily depend on the amount in the tobacco, but on the form in which it is smoked. In drawing this conclusion regard must, of course, be had to the quantity of tobacco smoked, but if the conclusion is correct, the pipe would come first as the least harmful form of tobacco smoking, then the cigarette, and lastly the cigar.

TETANUS BACILLI IN LYMPHATIC GLANDS.

TETANUS is generally considered one of the best examples of a pure toxæmia in which the infection is localised in the wound. Dr. J. M. Anders in Osler's "System of Medicine" says that "the bacilli can be isolated from the wound in which they develop but do not enter the circulating blood." In the *Boston Medical and Surgical Journal* of Dec. 23rd, 1909, Dr. C. A. Porter and Dr. O. Richardson have reported two cases in which the bacilli were found in the inguinal glands after a wound of the foot. In the first case a teamster, aged 23 years, was admitted into the Massachusetts General Hospital on March 8th, 1909. A week before a cartwheel had passed over the left foot. There were gangrene of three of the toes extending to the dorsum of the foot, an ulcerated area of the size of a dollar, and lymphangitis reaching as far as the internal malleolus. The temperature was 101° F., the pulse was 110, and the respirations were 23. On March 12th the temperature had fallen, the wound was becoming cleaner, and a line of demarcation was forming. During the night the patient complained of slight pain and stiffness in the back. By 7 A.M. he could not open his mouth and there was well-marked trismus with considerable stiffness of the neck. By noon there were trismus, risus sardonicus, stiffness of the neck and anterior abdominal muscles, and some rigidity of the legs. The left inguinal glands were slightly tender and much enlarged. Through a 4-inch incision the glands were removed *en masse* and antitetanic serum was injected into the anterior crural nerve. The wound was drained with rubber tissue and loosely sutured with silkworm gut. The left sciatic nerve was exposed through a posterior incision and "filled" with serum and the wound was closed without drainage. The gangrenous toes were then amputated and the wound was curetted and cauterised with pure carbolic acid and packed with gauze saturated with balsam of Peru. The patient recovered well from the operation, but the tetanic spasms increased in severity, and on the 14th opisthotonos was extreme and the face was cyanosed. Lumbar puncture was performed, and 6 cubic centimetres of a 25 per cent. solution of magnesium sulphate were injected at 12.32 P.M. The pulse rose from 130 to 180 in 20 minutes, but fell back to 130 in half an hour. At 2.10 P.M. the muscles of the legs were becoming relaxed. At 3 P.M. the muscles of the back were relaxed, the neck could be readily flexed, and the trismus was so diminished that he could drink. But an hour later he

became unconscious and in the early morning of the 15th respiration began to fail, and there was a slight return of the rigidity. Death occurred at 7 A.M., apparently from failure of respiration. In cover-glass preparations made directly from the lymphatic glands and from the amputated tissues one or two morphologically typical tetanus bacilli were found. Cultures made from the latter by the method of Kitasato after 48 hours in the thermostat gave off the peculiar disagreeable odour of tetanus cultures. Cover-glass preparations from the cultures showed numerous typical bacilli. A culture from the glands after four days in the thermostat gave the same odour and showed typical bacilli but not so numerous as in the culture from the foot. A white rat inoculated in the tail with the culture from the glands died from tetanus in 48 hours. In the second case, a boy, aged 13 years, was wounded between the first and second toes of the left foot with a rusty nail. Within 24 hours the wound was thoroughly opened and cauterised, but three days later the dorsum of the foot became puffy and on incision yielded dark grumous material. Twelve days after the injury trismus began, and on the following day there were some rigidity of the neck and anterior abdominal wall and a few slightly enlarged glands in the groins. The wound was filled with exuberant granulations and odourless pus. All the left inguinal glands were removed *en masse*, and 3000 units of antitetanic serum were injected into the internal saphenous vein. The tissues about the wound of the foot were removed and the wound was treated as in the previous case. Intramuscular injections of serum were given every two hours and recovery followed. The tetanus bacillus was proved to be present both in the glands and the tissue removed from the foot by the same methods as before. The bacillus was recovered from the rat which died from tetanus inoculated from the glands. These cases are of great practical importance, for if the lymphatic glands near a wound which causes tetanus prove to be frequently infected they, as well as the primary focus, should be eradicated.

TIMOTHY BRIGHT AND SHORTHAND.

WE have received a pamphlet written by Mr. Matthias Levy entitled "William Shakespeare and Timothy Bright." The pamphlet is an expanded edition of a note read in French by Mr. Levy at the Eighth International Shorthand Conference held at Brussels in July, 1905. At the seventh conference, held at Paris in 1900, a resolution had been passed, on the motion of Dr. Fuchs, a German delegate, to the effect that the shorthand manuscripts of Dr. Timothy Bright relating to Shakespeare and lying in the British Museum should be published. Inquiry, however, showed that Bright's shorthand MSS. had nothing to do with Shakespeare, although Bright and Shakespeare were contemporaries. Mr. Levy points out that it is probable that some of Shakespeare's plays were taken down in shorthand, and it is possible, or even probable, that the system used was that of Bright. Timothy Bright, who, says Mr. Levy, was "the first man in England who invented marks to represent words," was M.D. of Cambridge, graduating as such in 1579. His book, called "Characterie, an Arte of Shorte, Swifte, and Secrete Writing by Character," was published in 1588 and dedicated to Queen Elizabeth. Shorthand, not in the modern sense of signs expressing sounds, but in the sense of abbreviated writing known as Tironian notes, had been in use from at least the time of Cicero and probably earlier, for Tiro was Cicero's amanuensis. In somewhat later times a "shorthand" writer used to attend at the examination and the usually subsequent martyrdom of the primitive Christians, but most likely this form of shorthand was akin to the contracted writings of the Middle Ages. Bright's system consisted of 18 symbols, with four slopes for each letter, and 12 different ways of altering the base, so that each letter could represent 48 words. It was necessary for the student to learn by heart the signs for 537 words. Mr. Levy points out that since 1588 the medical practitioner and the shorthand writer have been associated, and instances Boerhaave and Van Swieten. He also quotes from our columns, April 23rd, 1825, some remarks as to the value of shorthand to medical students, and concludes with a reference to the Society of Medical Phonographers. From the institution of this society onwards we have frequently expressed our sense of the usefulness of shorthand to medical men.

AN OFFICIAL PLEA FOR POPULAR COÖPERATION IN THE PREVENTION OF MALARIA IN INDIA.

WE have repeatedly remarked that whatever care be exercised in the framing of sanitary laws and whatever vigilance be spent in their enforcement they cannot have anything like their full effect without the willing coöperation of the people for whose benefit they are framed, and the first step towards such coöperation must be of necessity education. In the promulgation of one of the very oldest sanitary codes, that of the Jews of the Exodus, we know that the education of the people in its stringent requirements was an important function of the priests, who were able to present their lessons backed with the authority of a Divine ordinance. But in these days the appeal must be made to reason and not to awe, though we are almost inclined to regret that there is no place in the religious doctrines of some of the native peoples dependent upon our rule and administration for the ritual enforcement of such prophylactic proceedings as are necessary for the avoidance of the chief diseases endemic in their countries. These reflections are occasioned by a perusal of some remarks made before the recent conference on malaria at Simla by Sir Herbert Risley, who fully appreciates the necessity for obtaining the coöperation of the people in stamping out the scourge of India that visits native and European alike. "What occurs to me," he said, "is that, when the new Legislative Councils are constituted, the non-official members might take in hand the question of malaria. There will be in every province members representing territorial areas, divisions, subprovinces, or groups of districts. I suggest that in each such area the member should form, and should himself preside over, a committee including all the leading men,—landholders, bankers, merchants, lawyers, professors and schoolmasters, journalists, doctors, in short every one of influence—and that they should initiate and carry on a systematic campaign against malaria. For each district there would be a similar committee, its president being a prominent municipal commissioner or an active member of the district board. They in their turn would see to the formation of committees in subdivisions, tahsils, taluks, whatever the local unit may be, and we may hope that in course of time the organisation will be brought down if not to the village, at any rate to groups of villages. If you ask what should they do, I would answer what could they not do? They would be in the closest touch with all ranks of the people; they could teach; they could persuade; they could do all the things that an official agency would attempt in vain. They would induce men of means to re-excavate the tanks which the piety of an earlier generation constructed; they would remind the absentee of his obligations to his ancestral village; they would initiate minor schemes of drainage; they would organise private charity for the provision of quinine, and above all they would bring home to the people that there are many simple measures which tend to avert malaria and that their only chance of escaping the disease is to carry out these measures

for themselves. In such propagandism the public spirit of Indian journalists would find unlimited scope. That is a rough outline of the lines on which the committees might work. The difficulties in front of them are obvious; but I see no other way in which they can be surmounted; and I am confident that the Indian members of this conference will agree with me in regarding the question as one of the highest national importance." We are glad to see that similar views are held by various native sanitarians, and may instance a paper contributed to the Medical Congress in Bombay on the Etiology, Epidemiology, and Prophylaxis of Malaria by Dr. Syed Mohamed Varis, in which he reviews all the accepted methods of prophylaxis, laying special stress on quinine distribution, and adding: "A word must be said on education that a doctor or administrator could do nothing unless there was a willing coöperation on the part of the people. The people should be taught to appreciate the sayings of science, and it could be accomplished during school training and through the newspapers and society. Though my countrymen are educated, most of them are, however, not enlightened enough to appreciate the work of science. The diffusion of knowledge regarding the new epidemiology and prophylaxis of this infectious disease ought to be undertaken by the social reformers to contradict old prejudice." It is the bounden duty of every medical practitioner in India, be he in the British service or native-born, to instil into the communities in his charge, so far as in him lies, the great lesson of the prevention of malaria.

THE BIO-CHEMICAL STANDARDISATION OF DRUGS.

SINCE there are certain drugs which at present cannot be assayed by chemical means, it is important that the physiological method of appraising their activity should be properly appreciated. It is natural that such important drugs as digitalis, squill, and strophanthus should have absorbed the attention of pharmacologists, for these endeavour to set up physiological standards for preparations of drugs for which there is no test available that will give as true an indication of their activity as a direct observation of their reaction with living tissues. It is mainly with this group of cardiac tonics that Dr. William Martin deals, in a paper read before the Newcastle meeting of the British Pharmaceutical Conference in 1909, which has been published as a brochure. In "Some Experiences in the Testing of Drugs by Bio-Chemical Methods with Special Reference to Digitalis, Squill, and Strophanthus" Dr. Martin gives the results of his observations founded on experiments with cannabis indica, ergot, and epinephrine, before passing on to a consideration of the three drugs named in the title. Cannabis indica he dismisses in a few words and confirms the view held by another investigator that the chief cause of deterioration of this drug is oxidation of the active principle. On the subject of ergot he offers a few general remarks and shows two blood pressure tracings of suggestive interest. With regard to epinephrine—the vaso-constrictor principle of the suprarenal capsules—he explains the method of testing which he uses in the pharmacological laboratory of Brady and Martin, Limited, Newcastle-on-Tyne, where, indeed, all the experiments on which the paper is based were performed. In testing digitalis, squill, and strophanthus he considers that the most suitable method for practical guidance in connexion with a manufacturer's laboratory, and one which gives as good results as any others advocated, is that which requires that a fatal termination shall follow, within a certain time limit, the administration to a small animal of a fixed dose of the preparation to be tested. He selects frogs as the animals most suited for the purpose, and deals minutely with the precautions necessary in selecting them. He explains in detail the methods he employs in testing the effects which the various preparations have upon them and records the inferences which he draws. In concluding what is undoubtedly an important contribution to the literature of this subject, Dr. Martin refers to the suggestion that some tests of a bio-chemical nature should be included in the British Pharmacopœia and expresses the opinion that the time is not yet ripe for the introduction of tests of this kind unless they are made permissive and not mandatory. Failing the application of physiological methods of standardisation to such drugs as cannot be assayed by other means, it is obviously necessary that pharmacists should utilise their skill in selecting drugs of high quality and display great care in storing them.

CARCINOMA SUPERVENING ON TUBERCULOUS LESIONS.

HOWEVER authorities may differ as to the cause of malignant disease, on one point at least they appear to be agreed, and that is that in numerous cases some previous damage has been sustained by the part in which the new growth arises. What this may be varies much in different cases. In some it is simple trauma, as in those instances where a sarcoma develops not long after a severe injury to a bone, or an epithelioma of the tongue appears where a jagged tooth has caused a septic ulcer. Sometimes the growth appears in the scar resulting from a former wound, and so many instances of this have been put on record that all surgeons are familiar with the occurrence. Sometimes, too, malignancy may develop in a swelling produced by one of the infective granulomata. This is not at all rare with syphilitic gummata, many cases of carcinoma starting on the dorsum of the tongue having been preceded by gummatous ulcers, and the same sequence has been noticed in syphilitic ulcers of the leg and of the scalp. It is decidedly less common for tuberculous lesions to be followed by the development of malignant growths, but in the present issue of THE LANCET two writers refer to this point. Dr. J. L. Bunch mentions a case in which epithelioma supervened on a lupus vulgaris even as early as the age of nine, and Mr. C. B. Lockwood records a very interesting case in which a carcinoma of the breast was associated with tuberculous glands in the axilla of the same side. When we consider how widespread tuberculous lesions are, and that carcinoma does not frequently follow upon them, it is clear that there is no natural tendency for the one condition to develop into the other. The number of cases recorded is small, while the supervention of epithelioma on a lupus of the face is extremely rare, though lupus of the face is so common. Curiously enough, when malignancy does manifest itself in a tuberculous lesion, the result appears to be especially virulent.

THE FAILURE OF THE X RAYS IN THE TREATMENT OF HYPERTRICHOSIS.

WHEN it was discovered that exposure to the X rays causes hairs to fall out it was thought that a new remedy for hypertrichosis, which was painless and easily applied, and therefore destined to displace the tedious method of electrolysis, had been discovered. In the *Journal of the American Medical Association* of Jan. 8th Dr. May C. Rice has pointed out that this is unfortunately not true. Many patients were treated with apparent success, but almost invariably, after periods ranging from two to six months, the original growth has been succeeded by a stronger growth and this by another and still another. Nevertheless, determined operators persisted in the treatment and gave series after series of exposures in the hope that eventually a permanent cure would be produced, which was achieved in rare cases. In treating most

diseases with the X rays there is the advantage that unhealthy tissues are more affected than healthy tissues, and therefore the disease can be cured with the production of only slight dermatitis, but in hypertrichosis the hair papilla which the operator desires to destroy is healthy, and therefore its destruction will require considerable exposure to the rays; dermatitis must succeed dermatitis until frequently a persistent and chronic inflammation is produced. In consequence of the selective action of the rays on glandular tissue atrophy of the sebaceous glands and hair follicles is produced while the papillæ remain. In addition, vaso-motor disturbances resulting in telangiectases and scars, which contrast with one another, are produced, causing an unsightly appearance. There is no remedy for this and time, instead of improving the condition, renders it worse from contraction of the scars. In cases of milder treatment yet sufficiently protracted to cause the hair to remain out for any length of time, telangiectases are not produced but a decidedly wrinkled prematurely senile appearance. In one case 75 exposures to the X rays had been given by an eminent dermatologist and experienced X ray operator. In another case a woman of 40 looked as if she was 60 and another undesired effect of the rays had been produced, strengthening of the downy hairs which had become black and decidedly conspicuous. This stimulating action of the rays in moderate dosage on hair growth can be utilised in the treatment of alopecia. The fact that epithelioma sometimes follows prolonged exposure to the rays must also be taken into account. Dr. Rice concludes that electrolysis is the proper treatment for hypertrichosis.

PRIMARY INFECTIVE EPIDEMIC NEPHRITIS.

ONE of the etiological problems which have to be cleared up is that of the actual causation of that large group of cases of acute and subacute diffuse nephritis in which there is a close resemblance to the clinical picture of scarlatinal nephritis, without, however, any antecedent attack of scarlet fever to explain the occurrence of the renal disorder. It seems probable that, while chill and other gross physical forces may predispose to such a lesion, an inflammation of the kidney of this type can only be excited by the presence of some appropriate infective agent in the blood stream, which is deposited in the kidney as it passes through the circulatory passages of that organ. Zannini [1] sends a short communication of the greatest interest in this connexion. After practising for some years in the neighbourhood of Brescia without seeing more than a single case of Bright's disease, he was confronted at the beginning of last year by a small epidemic of this disorder. Within about seven weeks there were 10 cases, all of them from the same neighbourhood, and many of them living in the closest proximity to each other. Practitioners in other districts saw no cases of the same type at that same time. There were six boys, two women, and two girls; the ages ranged from 5 to 38 years. The onset was acute in four instances, and in several cases there was a slight transient pyrexia. The principal symptoms were epigastric pain, dry cough, œdema, pallor, epistaxis, and urinary changes (albuminuria and oliguria, with passage of blood and casts); while in several cases uræmic phenomena, vomiting, dyspnœa, and convulsions, were noted. The duration varied from three days (in the one case ending fatally) to 28 days; in the great majority recovery appears to have been complete and absolute. Zannini refers to other similar outbreaks that have been described; the evidence as to their causation is inconclusive, and in this epidemic there is no light to be obtained as to its origin or nature apart from the fact that in most of the cases sore-throat was noted. This was not of the scarlatinal type, and though it might be urged that the cases really represented an aberrant form of scarlet fever it appears from Zannini's comments that this was not his own view.

[1] Rivista Medica, Milan, November, 1909.

Sir Alfred Jones, the chairman of the Liverpool School of Tropical Medicine and head of the shipping firm of Elder, Dempster, and Co., who died on Dec. 13th last, left estate valued at £674,259 gross. The bulk of the estate he left on trust for such charitable purposes and objects in England or any British possession on the West Coast of Africa as his trustees may think proper. For their guidance he indicated, among other purposes, original research of all kinds into the cause of disease on the West Coast of Africa.

WE regret to announce the death of Mr. William Warwick Wagstaffe, M.B. Lond., F.R.C.S. Eng., formerly senior assistant surgeon and lecturer on anatomy at St. Thomas's Hospital, which took place at Sevenoaks on Jan. 22nd, in his sixty-eighth year. Mr. Wagstaffe had lived for many years in retirement enforced by ill-health.

Mr. R. C. Punnett, of Gonville and Caius College, Cambridge, superintendent of the Museum of Zoology, has been elected to the professorship of biology at the University of Cambridge, recently vacated by Professor W. Bateson.

THE congratulations of the King and of the Royal College of Surgeons of England respectively have been conveyed to Mr. Edgar Jones, M.R.C.S., of Brentwood, on the recent attainment of his hundredth birthday.

PLAGUE is declining in Mauritius, 10 cases with 7 deaths having been reported during the week ending Jan. 21st.

THE MIDWIVES INSTITUTE.—The annual meeting of the Midwives Institute which took place last week, the President, Miss Wilson, being in the chair, was well attended. The announcement of the death of Dr. Stanley B. Atkinson, who had represented the institute on the Central Midwives Board for the past three years, cast a deep gloom over the proceedings. Dr. Atkinson had laboured unsparingly in the cause of midwifery nursing with a quick understanding of the needs and conditions of the work, and the midwives felt that they had indeed lost a friend. The whole assembly stood in respectful silence and passed a vote of condolence with the bereaved family. The Midwives Institute was founded nearly 29 years ago, although it was incorporated later in 1887. It was practically the first, and certainly one of the most energetic agents in the passing of the Midwives Act, and by keeping up the standard of its members has striven to raise the status of midwifery nursing. The reports of the various committees showed a large amount of work done, not only for its own members but in the cause of midwives throughout the country. The most recent effort towards a very desirable end—namely, the coördination of midwives into a more united and corporate body of workers—has taken the form of a committee of representatives, whose work it is to organise local associations in London and the country affiliated to the institute. By this means, and the meetings held in the various branches for discussion of topics connected with their work, midwives are encouraged to take an intelligent and personal interest in their calling. The chairman of the committee (Mrs. Stephen Glanville) stated that ten branch associations had already been organised, and the Liverpool Trained Midwives Association, numbering nearly 200 midwives, was affiliated. Lectures are held at the institute at regular intervals, and among the lecturers during the past year were Dr. Tom Robinson, Dr. F. J. Warwick, Dr. J. S. Fairbairn, and Dr. J. Curtis Webb.

OBSERVATIONS ON THE CIRCULATORY SYSTEM.

BY HARRY CAMPBELL, M.D. LOND., F.R.C.P. LOND.,
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V.[1]

HAVING now considered the various factors which determine the resistance in the cardio-vascular system, I shall endeavour to enunciate certain fundamental principles in connexion with the engineering (if I may be allowed the word) of this system. Especially shall I seek to show: 1. That there are two kinds of resistance in the pulmonary and systemic circuits: (*a*) the permanent resistance offered by the vessels when in a state of complete muscular relaxation; (*b*) the physiological resistance due to the narrowing of the smaller vessels by a contraction of their muscular elements. 2. That the resistance offered by the capillaries is so small as to be practically negligible. 3. That the cardio-vascular system is constructed with a view to offer the minimum anatomical resistance. 4. That there is little or no difference in the anatomical resistance of the pulmonary and systemic circuits. 5. That the excess of systemic over pulmonary resistance is due to the excess of physiological resistance in the former case. 6. That the object of this extra-physiological resistance is chiefly for the purpose of obtaining a head of pressure capable of producing the requisite flushing with blood of any given systemic vascular area when the need arises. 7. That this explains why systemic pressure is greater than pulmonary pressure, and why the left heart is stronger than the right.

Anatomical and Physiological Resistance.

The resistance which the vascular system offers when in a state of complete muscular relaxation we may speak of as "anatomical resistance." It constitutes that permanent resistance which is inevitable in any system of tubes. The varying resistance due to variations in the tonus of the vascular media, notably of the arterioles, subserving as it does a physiological purpose, we may conveniently speak of as "physiological resistance."

Anatomical resistance.—I am not aware that we have any means of accurately estimating anatomical resistance. This much, however, we may, I think, safely conclude—namely, that it is quite small, for, as I shall endeavour to show, the vascular system is constructed with a view to offering a minimum of anatomical resistance. We must once for all rid ourselves of the notion that a complex system of blood-vessels necessarily opposes great resistance to the blood flow. Several considerations militate against this view. Some of these I will mention. The pulmonary circuit under ordinary circumstances, when we may suppose some degree of physiological resistance to be superimposed on anatomical resistance, offers no more than some 20 mm. Hg of resistance; a pressure of 10 mm. Hg suffices to drive the blood through the complex vascular meshwork of the liver; the sudden diminution of physiological resistance which takes place in shock allows the blood to gush with alarming facility into the veins; in the horizontal position, at least, a comparatively small capillary pressure is sufficient to overcome the entire resistance in the systemic venous segment, and this in such colossal animals as the elephant and the whale; pointing in the same direction is the comparatively small difference in the systemic blood pressure of animals of different size, such as the sheep and the horse.

The comparative anatomical resistance in the two halves of the pulmonary circuit.—Anatomical resistance is probably much the same in the arterial and venous portions of the pulmonary circuit.

The comparative anatomical resistance in the two halves of the systemic segment.—Anatomical resistance is somewhat greater in the arterial portion; this arises from the fact that the bore of the systemic arteries (even when fully relaxed) is considerably less than that of the corresponding veins.

The comparative anatomical resistance in the pulmonary and systemic circuits.—We must be careful not to fall into the error of supposing that anatomical resistance is necessarily greater in the systemic than in the pulmonary circuit. I am not even prepared to admit that there is any decided difference between the resistance offered by the two. Resistance by no means necessarily rises and falls with vascular complexity and extent. There is a tendency to assume that the anatomical resistance in the systemic circuit is necessarily greater than that in the pulmonary circuit, because the former is the larger and more complex of the two; but consider the facts. We have first to remember that mere length of circuit has little influence on resistance. There is next the important consideration that by so much as the greater extent of the systemic segment causes its bed to be larger than that of the pulmonary segment, by so much does it cause the flow to be slower and the resistance less. Resistance is, in fact, diminished by increasing the vascular bed, and *vice versâ*. Thus four lungs placed side by side would oppose less resistance than two, the increasing vascular complexity thus effected leading to a parallel widening of the bed and consequent slackening of the blood flow. Contrariwise, a single lung would oppose more resistance than do the two lungs, and, as is well known, the more the pulmonary vessels are encroached upon by disease (e.g., phthisis) the greater is the resistance they offer to the blood flow. As a matter of fact, *were the pulmonary and systemic circuits constructed on the same lines, differing only in respect of extent and complexity, the pulmonary circuit would oppose the greater resistance.* This much seems certain: if the anatomical resistance in the pulmonary circuit is less than that in the systemic it is only slightly less, and, further, if it is less it is not because the pulmonary segment is smaller and less complex than the systemic, but because the bore of the pulmonary vessels (arterioles and venules) is smaller than that of the corresponding systemic vessels. Anatomical resistance in the pulmonary segment is greatest in the arterioles and venules, although even here it is probably quite small.

Capillary resistance.—In 1894 I contributed an article to THE LANCET,[2] in which I sought to show that the resistance which the capillaries offer to the blood current is so small as to be practically negligible, and subsequently in 1898 I gave my views for this conclusion at greater length in the *Journal of Physiology*.[3] Up to that time physiologists had all assumed the existence of a high degree of resistance in the region of the capillaries. Among them I may mention Michael Foster, Waller, Herman, McKendrick, Marie, A. Jager, Cohnhein, Roy, and Stewart. Since then many physiologists, including so high an authority as Professor Leonard Hill, have adopted my conclusion. In several students' textbooks, however, the older view is still taught. From some of these I will quote. W. D. Halliburton writes[4]: "The resistance of the capillaries would be large even for a stream of water, and when we consider that the blood is much more viscid than water we see the effect must be much greater." G. N. Stewart[5] states that friction increases greatly in the capillary region, and that "the resistance in the veins is very small as compared with that in the capillaries" (p. 97)[6]; and again (p. 105), he refers to "the great resistance of the narrow and much branched capillaries."[7] It would almost seem as if Thoma held the same views, for he quotes (apparently with approval) Recklinghausen to the effect that "the resistance which the blood stream has to overcome lies mainly in the capillaries."[8] William Howell alludes to the "great resistance offered by the narrow capillaries."[9] He even goes the length of attributing the excess of systemic arterial pressure over that of pulmonary arterial pressure to the fact that capillary resistance is greater in the former case than in the latter (p. 602), and he falls

[1] Nos. I., II., III., and IV. were published in THE LANCET of Jan. 1st (p. 48), 8th (p. 121), 15th (p. 193), and 22nd (p. 256), respectively.

[2] THE LANCET, March 10th, 1894, p. 594.
[3] Vol. xxiii., No. 4.
[4] Handbook of Physiology, 1909, p. 266.
[5] A Manual of Physiology, 1906, p. 96.
[6] On this same page Professor Stewart's physics appear to me to be at fault. He argues that because the rate of blood flow in the capillaries is some hundreds of times less than that in the aorta, there must be a great loss of kinetic energy in the capillary region. Is not Professor Stewart forgetting that the total amount of blood movement (= kinetic energy) is exactly the same through a section of the capillaries as through a section of the aorta?
[7] That by *capillaries* Professor Stewart means capillaries proper (and not arterioles and venules) is shown by a passage (p. 140, ibid.) in which he refers to these vessels as being devoid of a muscular coat.
[8] Text-book of General Pathology, &c. By Richard Thoma. Translated by Alexander Bruce, M.A., M.D., &c. 1896. Vol. i., p. 304.
[9] A Text-book of Physiology, 1909, p. 499.

into the additional error of supposing that the more rapid flow in the pulmonary circuit is due to this circumstance. G. A. Gibson assumes that the capillaries may offer considerable resistance.[10] Brubaker[11] writes: "From the difference in the extent of the pulmonary and systemic systems it is evident that, other things being equal, the friction is less, and, therefore, also the pressure is less in the former than in the latter."

In giving my reasons for concluding that the capillaries offer a very small resistance, let me at the outset state that by a capillary I understand a blood-vessel the walls of which are formed by endothelium only. The assumption that the capillaries offer a great resistance carries with it the conclusion that the pressure at their proximal end is considerably higher than that at their distal end, a condition of things which would not only cause the proximal portions of these highly yielding vessels to be much more distended than the distal, but would assuredly interfere with the proper interchange between the blood plasma and tissue lymph, seeing that this is largely influenced by the amount of capillary blood pressure. Moreover, such a difference in the amount of pressure borne by the two extremities of the capillary would certainly be met by corresponding differences of structure: the vessel at the proximal end would be stouter and stronger than at the distal end; yet there is no evidence of this. That the capillaries do not offer great resistance is further shown by the readiness with which the blood flows from the arteries into the veins when a widespread arteriolar dilatation occurs; by the fact that a pressure of a few millimetres of mercury in the portal vein suffices to drive the blood through the complex meshwork of the hepatic capillaries; and, finally, by the fact that a pressure of some 20 mm. Hg is sufficient to carry the blood through the entire pulmonary circuit, although the rate of the blood flow in the pulmonary capillaries is several times greater than that in the systemic capillaries, a circumstance which tends to augment capillary resistance.

These considerations show that the resistance which the capillaries offer must be very small. Let us now inquire into the physical explanation of the fact. First we have to take into consideration the extreme shortness of the capillaries. These vessels are by far the shortest in the body. Their average length has been variously estimated at 0·2 mm.—0·5 mm. Now, if we take the higher estimate, and if we suppose the average length of the various systemic circuits to be 1 metre—i.e., 1000 mm. (an estimate which is surely well within the mark), the distance traversed by the blood in its passage through the systemic capillaries would be no more than 1-2000th of the length of the entire systemic segment.

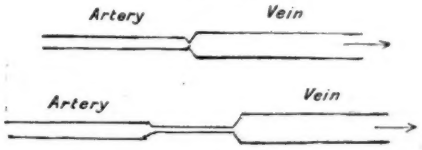
Again, we know that the degree to which the blood pressure falls in the capillaries is a measure of the resistance they offer, but it is doubtful if the blood pressure falls appreciably in these vessels. Its average fall per 0·5 mm. (i.e., the average extent of the capillary span) of the entire circuit, even supposing the entire fall to be but 100, would be—

$$\frac{100}{1000} \div \frac{1}{2} = \frac{1}{10} \div \frac{1}{2} = \frac{1}{20} \text{ mm. Hg.}$$

If, therefore, the blood pressure fell equally along the entire circuit the fall in the capillaries would be 1-20th mm. Hg, so that even if we estimate the capillary resistance as being 20 times greater than the average resistance it would yet only be equivalent to a fall of 1 mm. Hg. But are there any grounds for assuming that the fall of blood pressure in the capillaries, and therefore capillary resistance, *is* ten times greater than the average fall and resistance? I would unhesitatingly reply in the negative. The one factor tending to make capillary resistance high is the narrowness of the capillary lumen, but against this we have to consider the slowness of the capillary flow, the average rate of which is about 0·8 mm. a second.[12]

Physiologists in writing on capillary resistance often fall into the error of assuming that it is in direct proportion to the number of capillaries in the body. They continually refer to the enormous multiplicity of these vessels, and to the great resistance which such a multiplicity of tubes most oppose, whereas in point of fact *capillary resistance is less in proportion as the capillaries are numerous.* We must think of each arteriole as opening out into a capillary lake of blood, and the larger this lake the less is the capillary resistance. Were the ultimate arteriole connected with its venule by one single capillary the latter would oppose considerable resistance, for the flow through it would be many times more rapid than through the arteriole. Marie[13] has fallen into the curious error of assuming that the arteriole and venule are thus connected by a single capillary tube. He explains the supposed high resistance offered by the capillaries as follows. When fluid travels along a tube of equal bore throughout, the fall of pressure is regular, but if this tube is constricted in the middle (see Fig. 7, first diagram)

FIG. 7.



there is a sudden fall of pressure on the distal side. The capillary he regards as a constriction of the arteriole in its passage to the venule, and as thus offering a resistance similar to that of the constricted tube. But (so he urges) the obstacle to the blood flow is not due to a mere local constriction, the resistance obtains over a considerable length (*sic*) of the vessel. In order more accurately to represent the hydrodynamic conditions of the capillary flow we should, he contends, picture to ourselves a tube, not merely locally constricted, but one narrowed for a considerable length of its course (see Fig. 7, second diagram). It will be seen that this is a fallacious analogy, inasmuch as, proceeding from an arteriole to its capillaries, the vascular bed, far from becoming constricted, actually undergoes considerable expansion.

The cardio-vascular system is constructed with a view to offering the minimum anatomical (permanent) resistance—i.e., it would be impossible for an engineer to construct, even in theory, a system of branching tubes leading into a system of capillaries and then again into a system of uniting and reuniting tubes (I mean, of course, a system consistent with the needs of the circulation), which should offer less permanent resistance than the vascular system.

How Anatomical Resistance is Minimised.

In a system of tubes such as that constituting the vascular system resistance can be kept down: (*a*) by keeping the vessels as short as possible; (*b*) by keeping the bore of the vessels as large as possible; (*c*) by making the bed as wide as possible, not only by largeness of bore, but also by means of free branching; (*d*) by the adoption of means to minimise the production of eddies at the cardiac and vascular orifices.

(*a*) It will be found that in almost every instance the blood-vessels take the shortest and most direct route to their destination. Certain exceptions to this rule (coronary, facial, and vertebral arteries) have already been referred to. This minimising of length has, however, but little influence on resistance.

(*b*) Largeness of bore keeps down resistance, not only because the larger the bore of a tube the less is the resistance it offers for a given rate of flow, but because in a system of branching tubes the larger the bore of individual vessels the greater is the vascular bed, and the lower, therefore, the current.

(*c*) If every device is made use of to lower anatomical resistance in the vascular system, we should expect the vascular bed to begin to widen at the giving-off of the very first branches (i.e., the coronary arteries in the case of the systemic circuit) by a suitable regulation of the size of their lumen. Such a widening was, indeed, once thought to occur, but, as already observed, Thoma has shown that in the case of the arteries the vascular bed, and consequently the rate of arterial flow, remains the same—at least, until the region of the smaller subdivisions is reached. Now, it

[10] Diseases of the Heart and Aorta, 1898, p. 728.
[11] A Text-book on Human Physiology, 1904, p. 324.
[12] Observe, I say, the average rate of flow. The rate of blood flow in the capillaries varies, of course, enormously from time to time.
[13] La Circulation du Sang, Paris, 1881, pp. 158–159.

must be conceded that on this latter plan anatomical resistance must be greater than it would be on the alternate plan; in short, that a means of minimising resistance has not been made use of. To this, however, it may be replied that anatomical resistance not only in the pulmonary but in the systemic circuit is, as a matter of fact, extremely small, and that had it been necessary to make it still less, this might have been done by causing the vascular bed to widen out from the giving-off of the first arterial branches. Such an arrangement is evidently not only not necessary, but it must not be forgotten that it would be attended by the great disadvantages of necessitating a corresponding augmentation in the dimensions of the vascular system as well as in the blood mass. Economy must be a prime desideratum in the animal machine.

The vascular bed may be increased and resistance thus diminished, not only by increasing the bore of individual vessels, but by multiplying the division and subdivision of vessels, providing the united lumens of the branches is greater than the lumen of the parent stem, as it certainly is in the region of the arterioles.

We have seen that one of the reasons why the resistance in the capillaries is so small is the great width of the bed they form on account of their multiplicity. How far this method of lowering resistance by increasing vascular branchings is taken advantage of in the region of the smaller arteries I am unable to say. It is possible that no extra branching is needed for this purpose, but that only just so much branching takes place as is necessary to provide the requisite number of ultimate arterioles for the capillaries. This number is, of course, very large.

(*d*) One of the most effective devices by which resistance is kept down in the cardio-vascular system is by the adoption of means for lessening the production of eddies at the cardiac and vascular orifices. These means are so effectual that, normally, the orifices in question can scarcely be said to offer any special resistance at all, although they would otherwise oppose considerable resistance. To illustrate this statement let us consider: 1. The case of a vessel (see Fig. 8, first

FIG. 8A. FIG. 8B.

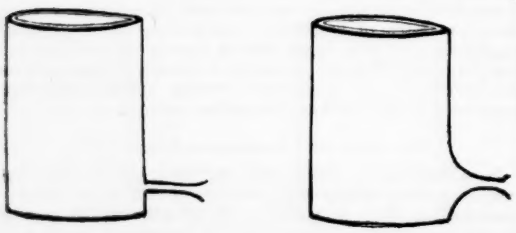


diagram) provided near the bottom with a cylindrical spout having the internal orifice of exactly the same dimension as the bore of the spout. 2. The case of a vessel (see Fig. 8, second diagram) similar in all respects to the one just considered, save that the spout, instead of communicating with the interior of the vessel by a sharp-rimmed orifice, expands internally into a funnel-shaped passage, the curves of which gradually pass into the side of the vessel. Now it will be found that water flows out of the second vessel almost twice as rapidly as out of the first. The reason is simple. In the first case abundant eddies are produced at the internal opening of the spout—i.e., the various stream lines of the flowing water tend to impinge against and to cross one another in their effort to round its sharp edges, and thus mutually hinder their escape. In the second case, on the other hand, the stream lines tend to be conducted by the curved walls of the funnel-shaped passage in curved lines running parallel to one another, the production of eddies being thus for the most part avoided.

From these simple experiments we may conclude: (1) That if the branches of the arterial tree (pulmonary or systemic) come off from their stems in the same way as the spout is inserted in the first case—in such wise, i.e., that the orifice of communication presents an abrupt rim—the blood as it flows into the branches must be thrown into eddies, and that in this way a considerable resistance must be offered to the flow through the arterial tree. 2. That if, on the other hand, the passages leading from the main stems are funnel-shaped or bell-shaped the tendency to the production of eddies at the giving off of the branches is minimised and resistance thus considerably reduced. Now in point of fact, the arterial branches are inserted into their stems by bell-shaped dilatations. This Thoma has shown by injecting melted paraffin at blood-pressure into the arterial tree and cutting sections at the branching points. I am not aware that any observations have been made to ascertain if the same arrangement obtains at the venous junctions, but I should be greatly surprised if these junctions are not so constructed as to offer a minimum of resistance. Nor can I doubt that special means are taken to reduce resistance at the cardiac orifices. While the blood is flowing through a cardiac orifice we would expect the passage leading to that orifice to become funnel- or bell-shaped; and similarly, when a cardiac chamber, the aorta, or the pulmonary artery is receiving blood, one would expect it to assume a shape calculated to facilitate the flow of blood into it.

Whether these surmises are true or not, certain it is that in obstructive valvular disease special means are adopted to minimise the resistance caused by the obstruction. This I pointed out in 1894.[14] It is well known that the passage leading up to a constricted auriculo-ventricular orifice is frequently funnel-shaped, but it is not so generally known that the like is the case in obstructive sigmoid disease. The fact is, in all cases of valvular obstruction the affected valves tend to become adherent at their adjacent edges and to form a funnel, the narrow opening of which points in the direction of the blood current. This funnel tends to persist until the valves become so mutilated by cicatricial or calcareous change as to form a mere flattened partition. Now it is significant that by the time this stage is reached the valvular orifice is always found to be slit-shaped ("button-hole orifice"), for it is a well-recognised principle in hydro-dynamics that, in the passage of a fluid through an orifice in a partition, a slit-like orifice offers much less resistance than a circular one of the same size. In short, when a cardiac orifice is narrowed by disease an endeavour is made, not only to increase the driving power of the cardiac chamber behind the obstruction, but to minimise the resistance which the narrowed orifice opposes. Evidently the flowing blood makes for itself the easiest channel available, as happens with all flowing liquids. We may observe, for example, that the angles formed by the tributaries of a river with the main stream are rounded off, and one can hardly doubt that during the development of the circulatory system the blood tends to form for itself channels offering a minimum of resistance. It is probable, for example, that under this influence the blood-vessels are moulded in a peculiar way at their junctions, producing the bell-shaped orifices referred to, although doubtless the formation of these is favoured by innate developmental tendencies.

(To be continued.)

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

The 12 Horse-power Talbot Car.

RELIABILITY and efficiency are undoubtedly the first consideration for a medical man when making his selection of a car, and an inspection at the recent Olympia Motor Show gave me the impression that this automobile had the necessary qualifications, a first thought which a subsequent prolonged test confirmed.

There are many interesting features in the Clement Talbot cars which easily explain their notable performances in many contests, as shown by the numerous trophies that this company had on their stand at Olympia. The motor is of the now popular four-cylinder 3¼ inch class; the cylinders are cast in pairs, which is an advantage over the fashionable type of all four being cast *en bloc*, as those who have had to remove the cover of such a one will realise. The bore is 80 mm. and the stroke 120 mm. If the Budget is passed this will be an advantage, as the horse-power will probably be calculated by the Automobile Club formula, which is based on the bore, and neglects the stroke. Without doubt,

[14] THE LANCET, March 10th, 1894, p. 594.

increasing the length of the stroke is as good as increasing the bore, and on this engine the proportion between the two is reasonable and in favour of the tax-payer. The inlet and exhaust valves are on the same side of the engine, mechanically operated and interchangeable.

The carburettor is of the float-feed spray type, with an automatic adjustable air valve. Ignition is by the popular and reliable high-tension magneto, as well as by coil and accumulator; both systems have a common lever on the steering wheel, by which the time of ignition can be varied. The Bosch magneto is placed forward of the engine in a very accessible position and may be readily dismounted by undoing two nuts. Those who desire can have the Bosch dual ignition, which, of course, permits, after brief halts, of starting by merely pressing a button. Lubrication is by pump; the oil is drawn from a sump in the crank-case, filtered, and forced to troughs under the big ends, and to the main engine bearings. Any excess of oil overflows into the sump again, and after being filtered re-enters the pump circulation. The sump contains enough oil for a run of some two hundred miles. An indicator on the dash shows if the oil circulation is being properly maintained. Greasers are fitted to the springs and all the main wearing points. The water circulation is by a centrifugal pump-gear driven by a cross shaft off the half time gear. A satisfactory radiator with cooling fan at back is fitted, and the water-pipes are of ample dimensions. The clutch is a leather-faced cone, which, in spite of its rivals, is still hard to beat, providing, as on this car, that the adjustable buffer springs on the face of the cone will secure easy engagement. The change-speed gear provides four forward speeds and a reverse, which are controlled by one lever, working in a gate form of sector. All the gear shafts run on ball bearings. The direct drive is on the fourth speed. An important point is that the gearbox is oil-tight and easily accessible. Gear-boxes that extrude their lubricating contents, even though a shield is fitted, are extravagant as well as unpleasant.

I used to believe that three forward speeds were enough for a moderate-powered car; a drive on this one proved the advantage of the fourth speed, for there are many hills that could not be taken on the top, but which the third easily managed, while on a three-geared car the gap between the top and second is too great, and it is just that want that the extra speed fills. The transmission from gearbox to the road wheels is by means of a live axle and cardan shaft, which latter is provided at its forward end with a universal joint of strong construction; at its rearmost extremity is the bevel which meshes with the crown wheel bolted to the differential box. A tubular casing or sleeve surrounds the cardan shaft and serves as a torque rod. Radius rods are also fitted. The frame is of pressed steel, narrowed at the dashboard to permit of a large steering lock. The engine and gearbox are carried on a pressed steel secondary frame. The usual brakes of the internal expanding kind are provided, and they seem to be made of the right stuff, and should not need adjusting every few hundred miles. A good point is that when they do require taking up it is an easy job to perform—small points, but important, for I have noticed that when brake adjustments are awkward to carry out the reforms are left perilously long neglected, and it is sometimes too late before the needful alterations are attended to. The control is by an accelerator pedal, in addition to the usual hand lever fitted on the steering wheel.

Of course, the proof of the value of a car is in the driving thereof. It is by the actual handling and behaviour of the vehicle on the road that its merits can best be judged, and I think there are few places which offer a better testing area than Woolwich and the county of Kent. I used the car for a morning's round and afterwards for a trip to Bexhill-on-Sea and back, in all some 145 miles. Up Willenhall-road, a hill of nearly 1 in 5, with a heavy landaulette body and four passengers, she went without a murmur, and I felt the radiator after the ascent and found that it was not excessively hot. I think this says much. Then we turned up over Shooter's Hill, round by Danson Park, through Sidcup, Farningham, across country by all the bad roads I could find to Tunbridge Wells, and so to Battle and on to Bexhill-on-Sea. The car took all the hills in magnificent form and seemed to me just the one to appeal to the medico-motorist, while it gives the driver that confidence which is the essence of the pleasure of being one's own chauffeur. The clutch is smooth in action, and the way the car "hangs" on the road on the top speed is bound to be appreciated. I certainly found it an interesting car to drive, with more than adequate engine power for any road and more than sufficiently fast for a doctor's purposes. The brakes were tested on really formidable hills and are smooth in action and remarkably powerful, for which I was grateful, as when descending a narrow, winding hill near Ninfield I found myself amidst a flock of sheep. In a second out came the clutch, and without any trouble the foot-brake alone brought the car to rest. For a small car, too, the springing is most luxurious, and the car is undoubtedly a production of which Messrs. Clement Talbot may well be proud. It is supplied as a touring car, with an ordinary side entrance body; as a landaulette for town use; and with a special two-seated body, with a curved, overhanging dash, high side doors, front glass, and hood. The last named struck me as especially suited for professional use.

How to Use up Burst or Worn-out Tyre Covers.

A device has recently been introduced which certainly enables a motorist to get a couple of thousand miles' wear from a scrapped cover. The value of a worn-out cover is microscopic, as those who have saved them up have probably found out, so I am sure all will welcome the latest introduction of the Stepney Spare Motor Wheel Company, Limited. It is known as the Stepney tube corset, and consists of a rubber and canvas tube, with a hole for the valve of the ordinary inner tube, and a slit all the way round, through which the inner tube can be inserted, and an overlapping flap that covers up the slit. The inner tube is put in with the valve sticking out of the valve hole, the flap is placed so as to overlap, and the corset is then placed inside the cover. Personally I found it quicker to take the cover off the wheel, insert the corset, and then inflate slightly, and lever the whole lot on to the wheel, insert the security bolts by the aid of a forked lever, and put on the rest of the cover in the usual way. Of course, with a burst on the road the cover need not be taken off, but with the tube in it, and the flap facing you, it can be put in like an ordinary tube. With the corset it is impossible to nip or pinch the inner tube, and the compressed rubber band which constitutes the flap is an extra protection against punctures. I recently heard of a Parliamentary candidate who had to travel some distance to address the electors of his district, and he, to avoid the possibility of a delay through a puncture, had the Stepney corset fitted to the four wheels of his car.

In order to test this invention I unearthed a very old burst cover from my scrap heap and put it on the driving wheel of my car, with the corset inside, and I have already done some 500 miles on this cover, which otherwise was useless, and, what is more, I hope to do another 1000 miles on it. This invention avoids the disadvantage of using an inner tube with canvas inserted in it, which is also another device for utilising old covers, but with this an ordinary all-rubber inner tube is used, which naturally can be repaired more easily than an inner tube reinforced with canvas. I think this benefit compensates for the little extra trouble that the corset takes to put in. It is certainly a contrivance which, by allowing old covers to resume their functions for some thousand or two miles, will repay quickly its cost, and should certainly be included in the motoring doctor's kit.

Autoclipse Lamps.

Messrs. Brown Brothers, Limited, of Newman-street, London, W., have just issued a new catalogue of their Autoclipse lamps, which I understand they will be pleased to forward to any motorist. The annoyance of powerful search-lights on motor vehicles has recently been brought out in an action in which Lord Curzon was the defendant, and though it is as well, in fact needful, to have proper road illumination when driving at night-time, as many of the profession have to, it is also essential to have a simple and instantaneous means of suppressing the dazzling glare of the head lights when approaching or passing other users of the road, and the Autoclipse does enable the driver to show consideration for other road-users. This anti-dazzling mechanism consists of a disc, which at the will of the driver can be interposed between the burner and reflector, and thus the long-distance rays which emanate from the back of the flame are cut out and the wide short-distance ones only are left. These lamps are of good quality and reasonable in price and can be supplied for electric light as well as for acetylene.

A Simple Method to Temporarily Repair a Broken Torque Rod.

On the old chain-driven cars a bent or broken torque or distant rod was an inconvenient occurrence: off would come the chain, and if some splint could not be fixed up the ignominy of a return with a mere horse in front had to be considered. Even now on live-axle cars the torque rod may, as the result of a fierce clutch, get out of shape or fracture. On most cars box spanners are carried, and these steel tubes may be utilised as splints. If the rod is merely bent one end should be dropped, the rod straightened, with heat if needful, and then the box spanner driven over until the weakened part is supported by it. Should the rod be broken, then the two ends, made as straight as possible, are brought together and kept so by the box spanner. If a drill is carried the rod may be drilled, so that bolts may be passed through the tommy holes at each end of the spanner, and thus a more secure job results. By these means the disgrace of appealing to a quadruped can be avoided.

How to Remove Stubborn Wheels.

It is occasionally needful to take off the back wheels, and on live-axle cars, which are now the rule, the master gears of the differential are fixed to solid shafts, to the other extremity of which the hubs of the driving wheels are keyed, the weight being carried by a casing or tube, in which the driving shafts revolve. Frequently the wheels become fixed on the shafts that drive them, and it is a trouble to draw them off. A good plan is suggested for doing this in a recent number of the *Autocar*. The cap is removed and against the end of the driving axle the termination or lifting part of an ordinary jack is placed, round some of the wheel spokes is passed a coil of rope, which is fixed to the other end of the jack, then by means of the ordinary lever the jack is unscrewed—that is, made longer—and so by this improvised cramp the axle is held back and the wheel is drawn off.

Concerning Mileage Covered.

A point that may be of interest, anyway in years to come, when the "horsey" doctor, by which I mean the practitioner employing a horse-drawn vehicle, has ceased to exist, is the mileage covered by those who used horse traction for their work. I do not know if speedometers or distance-meters are used on horse-drawn carriages; anyway, I have not been able to discover a professional man having one on such a convey ance. Consequently it is mere conjecture, but from inquiries among the now decreasing number of medical men who so cover their rounds, it seems that 5000 miles a year is above the average; but as the subject is of interest I should esteem it a favour if any colleagues would let me have some particulars on this point with a view of making a comparison on the distance travelled by medical men using horse-drawn and motor-drawn vehicles, and also as to the relative cost. I personally believe that with care and good luck a motor will show a saving on the expenses of a horse and trap, but in either circumstances many medical men would prefer to drive a motor in preference to a horse, for, as a correspondent has remarked, "Formerly I got nothing but work out of a horse, it was useless for pleasure, as it had to rest, but since I have had cars I have had no end of pleasure as well as work out of them." This gentleman certainly seems to have done so, as he tells me that he spent his holidays in his car going from Southampton to Glasgow, along Loch Lomond, over the Pass of Glencoe to Inverness, along the east coast to John O'Groat's, and *viâ* Stirling, Colwyn Bay, Worcester, Salisbury, and Lymington home, a run of some 2000 miles, and the whole cost was £4 11*s.* 6*d.* for petrol, under £2 for odd repairs and adjustments on the road, and £6 for a new cover. These figures certainly speak in favour of the car, both for work and play.

In considering the relative cost of the two means of propulsion, there is with the horse-drawn carriage the first cost of the horse, carriage, and harness, which may vary, according as to whether the carriage is a dog-cart or a brougham, from £50 to £150, or much more; then there is the annual cost for coachman, stable, fodder, veterinary, shoeing, repairs to harness, repairs to carriage, livery, insurance, depreciation of horse, harness, and carriage, as well as interest on capital. Even with a groom and a dogcart this means at least £100 a year, while with a brougham double that amount can be more than swallowed up. I believe a motor compares with advantage. The figures kindly supplied by Mr. Preston and published in THE LANCET for June 26th, 1909, show an initial outlay of about £140, and the annual cost for some 3000 odd miles a year was £30 to £40. This was on a little Rover. My partner, Mr. Stuart, uses a 14–16 four-seated Darracq, and including a professional driver, and with a mileage of over 5000 a year, his running expenses are not more than he spent on a horse-drawn vehicle—about £120 a year. If only sufficient matter is forthcoming, I trust to be able at a later date to publish fuller facts on the relative costs.

THE HEALTH OF THE ARMY IN 1908.

I.

THE report of the Army Medical Department for 1908 affords most satisfactory reading. In his introductory letter the Director-General summarises the chief points, and shows that the steady improvement in the health of the army that has taken place during the last decade has been fully maintained during the year under review. This can be most readily seen in the following table of ratios per 1000 of strength:—

	Admissions.	Constantly sick.	Deaths.	Invalids.
1889–1898	997·3	59·85	9·03	15·36
1903–1907	632·5	38·46	5·96	15·48
1908	573·1	32·28	4·78	10·32

It is seen that there is a large reduction in all these figures. With regard to the ratios for admissions to hospital and men constantly sick the decrease is due, no doubt, in a considerable degree to the introduction of the out-patient system of treatment, which permits of the milder cases of sickness being treated in barracks; this took place in 1904. But the diminution in numbers of deaths and of men invalided out of the service has not been due to this change in administration: the figures for the past year are the lowest that have yet been recorded. From a military standpoint the improvement in the health of the troops has increased their efficiency, and as a consequence the number of recruits required has been lessened; while the saving in the non-effective vote, for maintenance of hospital beds and provision of new hospital accommodation, "would be difficult to overestimate." Within a decade the effective strength of the army—as indicated by the fall in constantly sick rates—has been raised by 5776 men; and the wastage through deaths and invaliding reduced by 2900 men per annum. It has been found possible to make a reduction of more than 2200 beds at home stations, and a similar reduction is in course of being carried out in stations abroad. The Director-General attributes these results to four causes: 1. Change in medical administration by the introduction of the out-patient system of treatment. 2. Improved methods of treatment in hospital, e.g., the great increase in operative procedure that has marked recent years; in 1908, for instance, there were 638 admissions for hernia, 431 were operated on, and only 27 discharged as invalids; greater facilities are now granted for operative treatment than formerly, the theatres are thoroughly well equipped, and (we may observe) every encouragement has been given to the army surgeon to perfect himself in his art. 3. Improvement in sanitation and in preventive measures is shown by decline in enteric fever, malaria, venereal diseases, heart affections, tubercle, &c. 4. The appointment of army medical officers as medical inspectors of recruits has led to greater care and uniformity in the selection of the latter, and the adoption of a more rational physical standard.

A few points are singled out by the Director-General as worthy of especial notice. In the United Kingdom the returns for the past two years show that the reduction in sickness in 1908 is due to a general improvement in the health of the troops, and not to any one specific cause; there has been a marked decline in the admissions for alcoholism; both as regards total death-rate and deaths from enteric fever, tubercle, and alcoholism, army figures compare favourably with those of the civil population. Bermuda shows a great improvement in its health statistics, a record having been established, both in admission (134·8) and constantly sick rates (9·58), not only in regard to previous years at that station, but as compared with any station at home or abroad. No material change is to be noted in India; the decline in venereal disease continues, the figure

for 1908 being the lowest on record. A marked decrease occurred in the number of men invalided home, there being 692 fewer than in 1907, "the equivalent in transport accommodation of over 1700 healthy men, or a shipload and a half"; this is probably due to the establishment of convalescent depôts at selected hill stations, which seems to be working well, especially as regards malarial cases. Allusion is made to the work of a Commission, consisting of Major Ronald Ross and Major C. P. Fowler, R.A.M.C., appointed in 1907 to inquire into the prevalence of malarial fever in Mauritius. As the result of their recommendations the drainage of large tracts of land in the immediate vicinity of barracks has been carried out, the beneficial effects of which are already becoming apparent. The prevalence of sore-throat and tonsillitis in various stations has been inquired into by a committee of the Advisory Board, both bacteriologically and epidemiologically; no evidence of spread of infection or specificity of contagion appears to have been obtained. An interesting series of tables is appended, giving statistics of the armies of the four great continental Powers and the United States as regards the prevalence of various diseases in comparison with our own home army. The admission-rates are perhaps not so strictly comparable as the death-rates. For all diseases the United States army has the highest death-rate (5·63) and Germany the lowest (1·8); France (3·52) and Russia (3·13) are higher than our own figure of 2·52, but Austria (2·24) is lower. For enteric fever our ratio (0·10) is lower than that of any other except Germany (0·07); France (0·57) and Russia (0·91) are the highest; Austria has 0·27, and the United States 0·19. For cardiac affections the British and American figures are the same (0·3), being much higher than any others (France, 0·06; Russia, 0·05; Austria, 0·04; Germany, 0·02). For tubercle of lung we have the lowest rate but one (0·15), Germany having 0·1, while Russia has 0·33, France 0·35, Austria 0·42, and the United States 0·53. For venereal disease our *admission*-rate is 68·4; Germany has only 19·3 and France only 28·6, while the United States army has as many as 167·8 per 1000 of strength; Russia has 62·7 and Austria 54·2.

Recruiting.

The first division of the report proper deals with the medical examination of recruits. The physical standards have not been materially altered, a height of 5 feet 3 inches and a chest measurement of 33½ inches fully expanded, provided the expansion range reaches 2 inches, being now accepted. The minimum age is 18, and some special reservists, enlisted at 17, have been allowed to transfer at the end of their training. Most of these will develop into soldiers, but "admission at such an early age considerably lessens the remunerative stage of a soldier's service, by postponing the date at which he may with reasonable security be sent to take his place in the army beyond the sea." The difficulty of determining the recruit's age is great; many on the border-line present themselves, and it is doubtful if anything short of exacting a birth certificate would be efficacious; the practicability of this is for the recruiting authorities to decide, and perhaps it is doubtful.

The number of recruits examined has been 61,278; of these, 282·2 per 1000 were rejected on inspection, and 10·5 were found unfit within three months; both these figures are appreciably less than those for the previous decennium (313·7 and 12·03). Loss and decay of many teeth (53·5 per 1000), under chest measurement (45), heart disease (32·8), and defective vision (23·4) have been the chief causes of rejection; these are always among the most frequent disqualifications, but bad teeth and heart disease have been more so than usual this year, while defective chest measurement and defective vision show a smaller number of rejections. As to the *dental* disability, the report admits that "it has not been found possible to lay down a hard-and-fast rule as to what constitutes dental sufficiency, and a certain discretion must be left to individual examining officers, but a fairly uniform standard is gradually being evolved." After the war the standard set was too high; since 1906 more leniency has been allowed and greater weight attached to the general nutrition and body development; if men are taught to take care of their teeth a lower standard of dental sufficiency may be allowed; the issue of tooth-brushes has been of unquestionable value, but much remains to be done to educate men in their proper use. An observation of much force is made in this connexion. "On enlistment the men are very receptive; they are at the most impressionable period of their career, learning many new things and habits; and it should be no more difficult to teach them to keep their teeth clean than their buttons bright and polished." The boy recruits from the Duke of York's school are instanced: "Their mouths are a bright contrast to those of boys who have not been so instructed. They are fully aware of their advantages and little prone to forego what has become a pleasure. It is to the early education of the child in the care of its teeth, that we must look for an improvement in the dental armament of the recruit." The system of dental treatment at contract rates by civilian dentists, previously tried with success in the Northern Command, was made general in 1908, and is now working well, so that considerable saving of recruits may be expected.

Defective chest measurement (45 per 1000), though the second highest cause of rejection, is considerably less than during the previous decennial period (56·3); this is to be explained partly by the fact that "medical examiners now only reject those who do not attain to the physical requirements of infantry of the line, other rejections on account of men not reaching the standard of the particular corps of their choice being no longer included in the medical figures." When added to the rejections on account of height (8·68) and weight (4·1), the total rejections for defective development amount to 20 per cent. of the whole.

Heart disease (32·8 per 1000) is the third highest cause of rejection, and this disability shows an increase of 12·65 over the decennial average; "examining medical officers are wisely reluctant to pass recruits with a cardiac bruit which is not obviously due to some transient condition such as anæmia." The great difficulty is to appraise correctly functional derangements; excessive rapidity of the heart's action is common; the rule generally followed is "that moderate acceleration *per se* should be no bar, but that excessive persistent quickening, up to about 120 beats per minute or over, should be regarded as a disqualification."

Since test-types have been used instead of the old dots, the rejections for *defective vision* have progressively diminished. The standard is one-quarter of normal vision in each eye, or one-sixth in one eye and normal vision in the other; the rejections were 23·4 per 1000, those for the decennium 1898–1907 having been 35·7. "The present system of examination has proved its great superiority over [the test-dot method]. It ensures a better standard of working sight, whilst at the same time it saves a large number of men who would have been rejected under the former conditions; a more than usually happy combination of efficiency with economy."

In conclusion, it is stated that the average height, weight, and chest girth of recruits enlisted in 1908 show no falling off, and afford no evidence of degeneration in the physique of the population from which they are drawn; such trifling variations as are apparent are mainly on the right side. This is good hearing.

Invaliding.

The report next deals with the *invaliding* of the army. During the years before the South African War a rise was noticeable from 13·26 per 1000, the figure to which it had dropped in 1892; since 1904 the reduction has been considerable in each year (except 1907), and for 1908 the ratio is lower than ever before, amounting to only 10·32 per 1000. The most marked reductions have been in digestive diseases, syphilis, and rheumatism; circulatory and tuberculous diseases show a less noticeable diminution and nervous affections remain stationary. In the circulatory class valvular heart disease accounts for 227 and disordered action for 73 out of the total of 361 cases, both these figures showing a considerable reduction; they are attributed in part to greater judgment exhibited by medical officers in bringing men forward for invaliding, but in the main to an actual reduction of diseases of this nature in the army, the admissions to hospital for valvular disease having been 561, 514, and 362 for the three years 1906–07–08 respectively, and those for disordered action of the heart having been 1157, 1214, and 862 in the same three years. The improved system of physical training may also count, but it is too early to speak confidently on this point. In the class of digestive diseases dental caries accounted for 67 and hernia for 27 cases. The variations in the invaliding for these six classes of disease are shown on a chart, which,

however, is not clearly drawn out, the lines denoting the various diseases not being easily distinguishable from each other.

The statistics referring in detail to the United Kingdom, India, and the colonies are of the greatest interest. Out of the total force of 215,467 men there were serving in the United Kingdom 107,392 (or, including men detached, 118,474); in India, 68,522; and in the colonies the remainder, including Gibraltar 3493, Malta 6030, South Africa 14,075, and Egypt 5281.

In the United Kingdom the London District, as always, heads the list with an admission-rate of 695, a death-rate of 3·8, and a constantly sick-rate of 38·4. The Foot Guards have a higher ratio than any other arm of the service for admissions (733) and for constantly sick. The Infantry have the highest invaliding ratio (19·3). It is curious that almost the highest death-rate (3·6) should be registered for the Foot Guards, whilst the Household Cavalry have the lowest (2·2); the Foot Guards have the highest constantly sick rate (51·1), the Household Cavalry having only 20·8; also the Foot Guards have an invaliding ratio (14·9) far exceeding that of the Household Cavalry (8·1); probably variations in medical administration are accountable for these discrepancies. A table is given comparing the death-rate of the troops with that of the civil male population generally between the ages 15–35 years, from which it would appear that the troops have a much lower mortality than civilians of a similar age; but the invaliding has also to be taken into account, and this does not supply any exact factors for correcting the recorded death-rates. In certain cases, however, a comparison may fairly be made. Thus the death-rate for enteric fever amongst the troops at home was 101 per 1,000,000; that for civilian males aged 15 to 35 years (average rate for 1905–07) was 148. Enteric fever did not prevail to any great extent; 79 cases were admitted in all, with 12 deaths; 14 cases occurred at the Curragh in June and July, but no cause was discovered; there were 24 cases at Aldershot, 12 being admitted from one barracks. On investigation a corporal, who had had the disease in 1904, was found to be a "carrier," B. typhosus being detected in the urine.

An important observation is made regarding men invalided for tubercle of the lung, which, we think, should be exhumed from the mausoleum of facts now under notice and given prominence. These men do not at present undergo any sanatorium treatment with a view to fitting them to pursue some occupation when their service with the colours ceases. Most are in the prime of life, when cure or arrest of disease might be hoped for. We cordially agree with the report that there would appear to be, in the interests of the invalided men and their families, scope for some scheme of coöperation between the military authorities and the municipal bodies or charitable institutions possessing open-air sanatoria, which would offer to the men on discharge some prospect of that after-care and attention which is so necessary, if they are to recover their places in civil life as able-bodied citizens. Heart disease shows a most satisfactory diminution, as we have already noticed in considering the figures for the Army as a whole; the death-rate was 203 per 1,000,000 (compared with 253 in 1908 and 281 in 1906); the invaliding rate was also reduced from 293 in 1907 to 220 in 1908; aneurysm has declined from a death-rate of 112 per 1,000,000 in 1906 and 152 in 1907 to 93 in 1908; the invaliding rate was 59 in 1907 and 37 in 1908. Venereal disease occupies the highest place amongst the causes of inefficiency through sickness; the average number constantly sick has been 704, forming 27·4 per cent. of the total inefficiency; there has been a very slight reduction from the figure of the previous year. Sore throat and tonsillitis caused 43 per 1000 admissions, being especially prevalent in the London district (82 per 1000). On the whole, there has been a general improvement in the health of the troops at home, especially noticeable in those diseases which, so far as the army is concerned, are preventable—viz.: (1) pulmonary tuberculosis; (2) valvular affections and disordered action of the heart; and (3) diseases of the blood-vessels occurring in men under middle age.

Sanitation.

In dealing with *sanitation* special attention is drawn to the publication of Army Order No. 3 of 1908, by which the importance of a training in military hygiene for all ranks is officially recognised. Sanitary teaching has now been placed on a definite footing. General officers are now empowered to arrange for at least one annual course of lectures in sanitation for officers serving within their jurisdiction, to be given either by the command sanitary officer or some other officer selected for the purpose. All officers not otherwise engaged on duty are required to attend, and all lieutenants, except in the medical and veterinary corps, have to pass an examination in the subject. The excellent course of instruction in the Aldershot School of Army Sanitation is described; it has lately been transferred to new and more commodious quarters. During the summer systematic training in practical sanitation was carried out in the various camps of exercise throughout the country; and at Strensall, near York, opportunity was taken to mobilise a complete sanitary section during June and July, which was a distinct success. The experience at Strensall clearly demonstrated the value of sanitary organisation, the sage observation in the reports here being that to be successful sanitary effort must be controlled and directed along definite lines, so that each unit is made cognisant of its own duties and responsibilities and the whole taught to appreciate the ultimate object of every measure. The importance of this development can hardly be over-estimated in our opinion; it is the spread of sound practical ideas of health, cleanliness, and common sense as applied to camp life, and as demonstrated by those who know their subject and can make their voices heard, that will make impossible a repetition of the sanitary sins that were so frequent during the South African war. An epidemic of scarlet fever occurred at Caterham barracks, 40 cases being admitted in the early part of the year; no definite source of infection was detected; the disease was prevalent among the civil population at the time; no barrack-room infection was to be traced, but an exceptional incidence of sore throats, tonsillitis, and influenza was noticed in those blocks where scarlet fever had been most prevalent. Though the structural arrangements of all the blocks concerned were essentially the same, it was shown on examination that the buildings chiefly infected were surrounded on all three sides by badly leaking drains. These were thought to be responsible for a prevalence of sore throats in these buildings and so help to explain the fever incidence. It seems very reasonable to suppose that the leaky drains were responsible for the sore throats; we should like to know who was responsible for the leaky drains? are there no functionaries in the medical or engineer departments whose business it is to look after these matters? No doubt this particular stable door has now been carefully locked.

(To be continued.)

ANNUAL REPORT FOR 1908 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

III.[1]

The Administrative Control of Phthisis.

BY way of preface to his summary of the administrative efforts of the London County Council for the control of tuberculous phthisis Sir Shirley Murphy gives account of the more important voluntary and philanthropic agencies existing in the metropolitan area with the same object in view. A system of voluntary notification of phthisis has been adopted in most of the London sanitary districts, and in the year under notice 3166 cases of that disease were reported to the local medical officers of health. But from the fact that within the same area 4330 deaths from phthisis were registered it is clear that the system of voluntary notification is far from complete. That system, however, is at present only in its infancy, and there is reason to hope that through the coöperation of the hospitals to which phthisical sufferers resort for relief the practice will be substantially extended. It is encouraging to learn that many of the larger hospitals already coöperate actively with the local sanitary authorities in their crusade against phthisis. The Brompton Hospital

[1] Previous notices of this report appeared in THE LANCET of Jan. 15th (p. 196) and 22nd (p. 259), 1910, respectively.

for Consumption has made arrangements by which the names and addresses of patients attending the hospital are, with their consent, notified to the medical officer of health, and the hospital authorities invite those officers to send to that institution, for examination and treatment, any other members of their families who may present symptoms of the disease. Sir Shirley Murphy is in communication with the authorities of several other hospitals specially resorted to by consumptives, with the hope of securing the adoption of the system in operation at Brompton Hospital—a system which, as he says, deserves extension throughout the metropolis. St. Thomas's Hospital employs almoners who visit the homes of sufferers from phthisis and give advice as to their management; they also endeavour to secure the attendance for the aforesaid purposes of other members of the families who may be similarly affected. Guy's Hospital also has made arrangements by which the medical officer of health may be informed of the names and addresses of phthisical patients attending the out-patient department. But the important point which Sir Shirley Murphy makes is this, that with respect to the opportunities which are needed for utilising the information gained by phthisis notification London is but imperfectly provided. "Phthisis mortality," he insists, "occurs especially among the poor, and the measures for its reduction must largely include those which afford assistance, not only to the sufferer, but often to the families of invaded households. It is here that extension of philanthropic effort is greatly needed. The notification of phthisis, without the ability to ameliorate the condition of the sufferer, is not calculated to effect the main object in view." Voluntary health societies render useful aid in a few of the London districts, such as Hampstead, Battersea, St. Marylebone, Paddington, Stepney, Southwark, and Westminster, and their services, as well as those of the Charity Organisation Society and of the several children's care committees, deserve greater encouragement than they receive. But what is needed is a much wider development of that assistance which such voluntary agencies can render in supplementing the work of medical officers of health.

Particulars are given in the report of the procedure adopted in those metropolitan districts in which voluntary notification of phthisis is in operation. In a few of the districts the medical officer of health undertakes the duty of visiting every house in which a case of phthisis is reported to exist, he gives all necessary advice as to the management of the patient and the course to be adopted to prevent the spread of infection to other members of the family, but for the most part this duty is performed not by the medical officer but by the sanitary inspector or the health visitor. Where there exists a voluntary health society the case is generally handed over to its care, but in many districts nothing results from the receipt of notification beyond the giving of advice and the offer of facilities for disinfection in suitable cases. Nevertheless, it deserves mention that a useful work is undertaken by almost all the sanitary authorities in London by giving opportunities for the examination of sputum from suspected cases of pulmonary phthisis. The annual reports of medical officers of health show the number of specimens examined and the results found. The opinion of Dr. Reginald Dudfield is quoted concerning the value which Paddington derives from the dispensary recently established there for the prevention of consumption. Dr. Dudfield reports that not only will patients accept that medical and hygienic advice which is necessary for their own treatment and for preventing the spread of infection, but they welcome visitation in their homes by a doctor or a nurse for the purpose of teaching the patients how to give effect to the hygienic measures prescribed and of seeing that they are carried out. Dr. Dudfield adheres to the opinion that the dispensary system requires the help of notification in order to achieve the best results. By an order of the Local Government Board the notification is now required of all cases of phthisis occurring in Poor-law practice, so that since the beginning of the year 1909, when the order came into force, metropolitan medical officers of health have received information of many of the cases of phthisis occurring in that section of the community which exceptionally needs instruction and assistance.

Public Health Legislation: The London Milk-supply.

In the course of the year 1908 several Acts of Parliament were passed by which public health administration in the metropolis will be affected beneficially, whilst the operation of some of these enactments is not limited to London. Among these is the Children Act of 1908, which gives powers to local education authorities to secure the cleansing of verminous children attending elementary schools, and contains important provisions for the prevention of tobacco-smoking by young children. The London County Council (General Powers) Act of the same year contains many salutary provisions for administrative purposes. Under this statute sanitary authorities are empowered to appoint health visitors and, with the approval of the Local Government Board, to determine their mode of appointment, duties, and tenure of office, as well as to contribute towards their salaries. The same authorities are empowered to remove from the registers kept under the Dairies and Cowsheds Orders the names of dairymen carrying on business in unsuitable premises and to require suitable provisions for the cooking of food in tenement houses, as well as for the observance of cleanliness in such premises and in the persons so employed. A further section of the Act contains regulations for the enforcement of cleanliness in premises in which food is prepared or adapted for sale and for the regulation of noxious trades such as those of fish curer and rag-and-bone dealer.

By means of recent legislation the County Council has obtained Parliamentary powers for the more effectual protection of the metropolitan milk-supply. To some of these, which have for their object the exclusion of the tubercle bacillus from the milk sent to London from a distance, we shall now briefly refer. By the Dairies, Cowsheds, and Milkshops Order of 1899 it was provided that the milk from cows certified by a veterinary surgeon to be affected with tuberculous disease of the udder should not be sold for human food or, without having first been boiled, for the food of swine. But in the year 1904 the County Council, being dissatisfied with existing legislation on this subject, obtained authority under the General Powers Act of that year to remove from any dairy farm or cowshed within their jurisdiction any cow suspected to be suffering from tuberculosis of the udder, the owner being entitled to compensation for the loss of the animal in the event of the suspicion being verified on post-mortem examination. Consequently, ever since the passing of the last-mentioned Act all the cows in the London cowsheds have been periodically examined by the Council's veterinary inspector with a view to the detection of animals thus affected. In the course of the year 1908 the whole of the cows, averaging from 3000 to 3500 in number, were examined on five separate occasions, with the result that 16 of them were found affected with tuberculosis of the udder and were destroyed. By these means the freedom from tuberculous contamination of the milk actually produced in London would appear to have been fairly provided for, but it is well known that by far the greater part of the milk consumed in the metropolis must always be derived from the country districts, and that hitherto no adequate steps have been taken to secure its purity or to protect the London consumer from the dangers of tubercle-infected milk. Accordingly, in the year 1907, the County Council obtained far-reaching powers for this purpose under Part IV. of their Act for that year. The Act referred to empowers the county medical officer of health or his deputy to take, either within or without the county, samples of the milk intended for sale within the county, and in company with a veterinary inspector to examine the cows in any dairy from which milk is supplied to London, and to take for analysis samples of milk from any cow suspected to be suffering from tuberculosis of the udder. The County Council are further empowered to prohibit, under penalty, the supply of milk from any dairy, or from any cow kept therein, if it appears to the Council that tuberculosis is caused, or is likely to be caused, to persons residing in London from the consumption of such milk.

By resolution of the Council the powers here specified came into force at midsummer 1908, during the last half of which year 620 samples of milk were taken by the County Council inspectors from churns consigned from country districts to the various railway termini in London, and were submitted to the Lister Institute for bacteriological examination. In every case in which a milk sample was found to be infective a clinical examination of the cows at the dairy supplying that sample was made by an authorised veterinary

inspector. Up to the date of publication of this report 528 examinations had been completed out of the 620 samples taken during the year under notice, and of these not less than 11·6 per cent. were found to contain tubercle bacilli. A table is given in the report showing the country districts from which the samples were taken, and also the proportion of tuberculous contamination detected in each case, and we trust that similar tables will be published in future annual reports. Authoritative information of this kind will certainly be valuable to London milk-consumers, who will thus be able to judge of the relative safety of the milk produced in the country districts from which their own supply is obtained.

Medical Supervision of Midwifery Practice.

Under the Midwives Act of 1902 the number of midwives registered as practising in London in the year under notice was 3020, which number is reduced to 2690 after correction for removals and deaths. Of the practising midwives about 25 reside in lying-in hospitals or in workhouse infirmaries, where they are under the supervision of the medical staff. All practising midwives in London (except those working under the direction of a medical practitioner) are subject to supervision by the officers of the County Council to ascertain how far they are observing the directions of the Central Midwives Board as to cleanliness and as to disciplinary matters generally. The work of supervision on behalf of the County Council is carried on by two lady medical inspectors. In addition to routine work it is the endeavour of these officers to improve the knowledge of midwives and to suggest methods for the better performance of their duties. The inspectors also frequently accompany the midwives to confinements and on their subsequent visits to puerperal women. Already much useful information has thus been acquired as to the actual methods employed by midwives, and as to their individual fitness for their work. During the year under notice 1420 visits of inspection were made, and in most cases where the report was unsatisfactory the midwife's attention was drawn to the particular rule infringed, and at a subsequent inspection the inspector was generally able to report favourably. In case of serious misconduct or of neglect the matter is reported for decision to the Central Midwives Board.

Notification of Births Act.

In any sanitary district of London where it is adopted this Act provides for the notification to the medical officer of health of the birth of every child within 36 hours of its occurrence. In the year 1908 this Act was adopted by 15 metropolitan boroughs and also by the City of London. Until this Act has been more generally applied in the metropolitan area it is obviously premature to attempt an estimate of its value. But from returns made to the County Council by local medical officers of health it appears that in the districts to which the enactment already applies 75 per cent. of the total births registered were notified under its provisions.

Sanitary Inspectors and Health Visitors.

The Public Health Committee of the County Council has had under consideration the sufficiency of the staffs of sanitary inspectors for the work required in several of the metropolitan districts. The borough of Bermondsey appears to have been a defaulter in this respect; so much so that the Council found it necessary to bring pressure to bear on that body by representation of its default to the Local Government Board, which after inquiry made an order requiring the borough council to appoint three additional inspectors. In Marylebone two additional male inspectors and one temporary female inspector were appointed during the year, and additional male or female inspectors were appointed for the districts of Wandsworth, Hampstead, and Poplar. The question of the employment of female sanitary inspectors or health visitors was considered by the borough councils of Stepney and Camberwell, but hitherto no appointment has been made.

To the present report, which we regard as in certain respects the most important of the series for which London is indebted to Sir Shirley Murphy, there are added five appendices, all of which, and especially that of Dr. James Kerr on Elementary Education, are of great public interest. To the consideration of some of these we hope to recur on a future occasion.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Jan. 28th, 1832.

ALUM IN TOOTHACH.

Dr. Kuhn asserts that alum, finely powdered, not only relieves the toothach, but arrests the progress of caries in the tooth. One or two grains are to be inserted into the cavity of the tooth, to be repeated when the pain returns. In a short time, the pain will cease to recur, and the chemical action which constitutes the caries will cease.

(In connexion with the above paragraph, and especially as the remedy is at the present day (1910) often recommended to the public in popular journals, it may be interesting also to quote the following paragraph from *The Pharmaceutical Journal*, Vol. VI., 1846-47, p. 188.)

REMEDY FOR THE TOOTH-ACHE.

THE following application is said to soothe the irritability of the nerve of a decayed tooth, without occasioning any inflammation in the periosteum or in the gums, as is generally the case with the remedies used:

Powdered alum is made into a paste with nitrous ether, and a small quantity of this is put into the hollow of the decayed tooth. It is sometimes found serviceable to spread some of this paste over the gums, when they are congested and painful.—*Bull. de Therap.*

(The Editor of *The Pharmaceutical Journal* added:—"This remedy has been long used in this country.")

VITAL STATISTICS.

VITAL STATISTICS FOR 1909.

THE following are the provisional figures showing the birth-rates and death-rates in England and Wales in the year 1909:—

—	Annual rates per 1000 living.				Deaths under one year to 1000 births.
	Births.	Deaths.		Principal epidemic diseases.	
		Crude.	Corrected.*		
England and Wales	25·6	14·5	14·5	1·12	109
76 great towns ...	25·7	14·7	15·6	1·42	118
143 smaller towns	24·8	13·9	14·5	1·08	111
England and Wales less the 219 towns	25·6	14·5	13·6	0·80	98

* The corrected death-rates are the rates which would have been recorded had the age and sex constitution of the populations of the several areas been identical with that of England and Wales as enumerated in 1901.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7554 births and 4749 deaths were registered during the week ending Jan. 22nd. The annual rate of mortality in these towns, which had been equal to 14·8 and 14·9 per 1000 in the two preceding weeks, declined again to 14·8 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these towns did not exceed 14·8 per 1000, and the mean rate in London during the same period was as low as 14·4. The lowest annual rates of mortality recorded in the 76 towns last week were 6·8 in King's Norton, 8·5 in Hornsey and in Newport (Mon.), and 8·8 in Willesden; the rates in the other towns ranged upwards, however, to 22·8 in Bury, 22·9 in Rhondda and in Barrow-in-Furness, and 23·7 in Swansea. In London the recorded death-rate last week did not exceed 14·5 per 1000. The 4749 deaths registered in the 76 towns last week showed a decline of 37 from the number in the previous week, and included 278 which

were referred to the principal epidemic diseases, against 242 and 288 in the two preceding weeks; of these 278 deaths, 98 resulted from whooping-cough, 58 from measles, 44 from diphtheria, 32 from diarrhœa, 31 from scarlet fever, and 15 from "fever" (principally enteric), but not one from small-pox. The annual rate of mortality from these epidemic diseases last week was equal to 0·9 per 1000, against 0·8 and 0·9 in the two preceding weeks. No death from any of these epidemic diseases was registered last week in Croydon, Willesden, East Ham, Brighton, Derby, Southampton, or in 12 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·9 in West Bromwich, 3·2 in Swansea, 3·3 in Barrow-in-Furness, and 4·1 in Ipswich. The fatal cases of whooping-cough, which had been 109, 77, and 79 in the three preceding weeks, further rose again last week to 98, and caused annual death-rates equal to 1·5 per 1000 in Walthamstow, in Hastings, and in Bootle, and to 1·9 in West Hartlepool. The deaths from measles, which had been 36 and 61 in the two previous weeks, declined to 58 last week; the highest annual rates from this disease last week were 1·6 in Northampton, 2·1 in Swansea, and 3·4 in Ipswich. The 44 deaths referred to diphtheria showed a decline of 16 from the number in the previous week, and included 14 in London and its suburban districts, 6 in Liverpool, 4 in Manchester and Salford, 3 in Barrow-in-Furness, and 2 both in Hanley and in Bradford. The 31 fatal cases of scarlet fever exceeded the low number in the previous week by 7; they included 5 in Birmingham and Aston Manor, and 6 in Liverpool. Only 32 deaths were attributed to diarrhœa, against 36 and 46 in the two preceding weeks; and but 15 deaths were referred to "fever," of which 2 were recorded in Devonport and in Liverpool, and 4 in London and its suburban districts. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had declined in the 14 preceding weeks from 2819 to 2172, had further fallen to 2069 on Saturday last; 204 new cases of this disease were admitted to these hospitals last week, against 244, 212, and 200 in the three preceding weeks. The Metropolitan Asylums Hospitals contained 3 cases of small-pox on Saturday last. Of the 1351 deaths registered in London last week 291 were referred to pneumonia and other diseases of the respiratory system, against 360, 338, and 285 in the three preceding weeks; these 291 deaths were fewer by 106 than the corrected average number in the corresponding week of the five years 1905–09. The causes of 40, or 0·8 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, Leicester, and in 49 other smaller towns; the 40 uncertified causes of death in the 76 towns last week included 8 in Liverpool, 7 in Birmingham, and 5 in Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 829 births and 563 deaths were registered during the week ending Jan. 22nd. The annual rate of mortality in these towns, which had been equal to 20·4 and 16·7 per 1000 in the two preceding weeks, further declined to 15·5 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Scotch towns averaged 17·5 per 1000, and exceeded by 2·7 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 11·2 and 11·4 in Aberdeen and Leith, to 17·7 in Greenock and 20·8 in Dundee. The 563 deaths from all causes in the eight towns last week showed a further decline of 41 from the high numbers in the two previous weeks, and included 77 which were referred to the principal epidemic diseases, against 93 and 82 in the two preceding weeks. These 77 deaths were equal to an annual rate of 2·1 per 1000; the mean death-rate from the same diseases in the 76 English towns last week did not exceed 0·9 per 1000. The 77 deaths from these epidemic diseases in the Scotch towns last week included 46 from measles, 13 from diarrhœa, 8 from diphtheria, 4 from "fever," 4 from whooping-cough, and 2 from scarlet fever, but not one from small-pox. The fatal cases of measles, which had been 68, 55, and 37 in the three preceding weeks, rose again to 46 last week, and included 39 in Glasgow and 6 in Edinburgh. The 13 deaths attributed to diarrhœa showed a further decline from the numbers in the two previous weeks; 5 were returned in Glasgow, 4 in Edinburgh, and 3 in Dundee. The deaths from diphtheria, which had been 5 and 9 in the two previous weeks, were 8 last week, of which 4 occurred in Glasgow and 2 both in Dundee and Aberdeen. The 4 fatal cases of whooping-cough corresponded with the numbers in the previous week, including 2 in Greenock; the 4 deaths referred to "fever" (fewer by 3 than those in the previous week) included 3 in Glasgow and 1 in Greenock. Both the fatal cases of scarlet fever occurred in Glasgow. The deaths in the eight towns last week referred to diseases of the respiratory system, which had been 181, 172, and 132 in the three preceding weeks, further declined last week to 101, and were 17 below the number returned in the corresponding week of last year. The causes of 10, or 1·8 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 545 births and 422 deaths were registered during the week ending Jan. 22nd. The mean annual rate of mortality in these towns, which had been equal to 25·4, 19·7, and 22·3 per 1000 in the three preceding weeks, declined to 19·1 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Irish towns averaged 20·4 per 1000, whereas the mean rate during the same period did not exceed 14·8 in the 76 largest English towns and 17·5 in the eight principal Scotch towns. The annual death-rate last week was equal to 22·5 in Dublin, 16·7 in Belfast, 16·1 in Cork, 14·4 in Londonderry, 20·6 in Limerick, and 17·5 in Waterford; the mean annual death-rate last week in the 16 smallest of the Irish towns was equal to 20·0 per 1000. The 422 deaths from all causes in the 22 town districts during the week showed a decline of 70 from the number returned in the previous week, and included 29 which were referred to the principal epidemic diseases, against 36 and 28 in the two preceding weeks; these 29 deaths were equal to an annual rate of 1·3 per 1000; in the 76 English towns the mean rate from the same diseases last week did not exceed 0·9 per 1000, but in the eight principal Scotch towns it was equal to 2·1. The 29 deaths from these diseases in the Irish towns last week included 18 from whooping-cough, 6 from diarrhœa, 4 from diphtheria, and 1 from "fever," but not one either from measles, scarlet fever, or small-pox. The 18 fatal cases of whooping-cough showed a decline of 4 from the number returned in the previous week; they included 13 in Belfast, and 4 in Dublin. Of the 6 deaths attributed to diarrhœa 4 occurred in Dublin; and of the 4 fatal cases of diphtheria 3 occurred in Dublin and 1 in Belfast. A death was referred to enteric fever in Dundalk. The deaths in the 22 town districts referred to pneumonia and other diseases of the respiratory system, which had been 110 and 138 in the two preceding weeks, declined again last week to 107. The causes of 26, or 6·2 per cent., of the deaths registered last week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent., and in the eight principal Scotch towns it was not higher than 1·2 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, the following Inspectors-General of Hospitals and Fleets have been placed on the Retired List at their own request:—Henry Thompson Cox and Leonard Henry Kellett (dated Dec. 6th, 1909).

Consequent thereon the following promotions have been made from the same date:—Deputy Inspectors-General: Charles James and Arthur William May to be Inspectors-General of Hospitals and Fleets in His Majesty's Fleet. Fleet Surgeons: Timothy Joseph Crowley and Donald

Templeton Hoskyn to be Deputy Inspectors-General of Hospitals and Fleets in His Majesty's Fleet.

ARMY MEDICAL SERVICE.

Major Charles E. Pollock, R.A.M.C., to be a Deputy Assistant Director-General (attached to the Department of the Director of Military Operations), vice Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C., whose tenure of that appointment has expired (dated Dec. 29th, 1909).

ROYAL ARMY MEDICAL CORPS.

Major Robert C. Thacker retires on retired pay (dated Jan. 25th, 1910).

The undermentioned officers are seconded:—Captain John Powell, for service with the Egyptian Army (dated Sept. 22nd, 1909). Lieutenant Stephen Field, for service under the Colonial Office (dated Oct. 1st, 1909). Lieutenant William P. McArthur, from the Seconded List, is restored to the establishment (dated Dec. 1st, 1909).

Lieutenant-Colonel W. G. Macpherson, C.M.G., is posted to the London District and Lieutenant-Colonel R. J. S. Simpson, C.M.G., to the Royal Herbert Hospital, Woolwich. Major J. C. Morgan from Cahir has been appointed sanitary officer to the Dublin District. Lieutenant-Colonel Yarr has been appointed Medical Inspector of Recruits, Scottish Command. Lieutenant A. S. Cane, Lieutenant G. H. Dive, Lieutenant R. Gale, and Lieutenant J. M. Weddell have been posted for duty in the London District, and Lieutenant C. G. Collett, Lieutenant R. H. Nolan, and Lieutenant P. C. Field for duty in the Aldershot Command. Captain R. T. Collins is transferred from the Garhwal Brigade to the Station Hospital, Meerut, India. Captain J. W. L. Scott is appointed specialist in Radiography and Electrical Science in the 4th (Quetta) Division, and Lieutenant R. G. S. Gregg specialist in the Prevention of Disease in the Presidency Brigade, Calcutta, India.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel T. Grainger is appointed Principal Medical Officer, Burma Division, vice Colonel H. K. McKay, C.B., C.I.E., retired. Major Jay Gould has been appointed Staff Officer, Medical Mobilisation Stores, 3rd (Lahore) Division, vice Major G. H. Frost, who reverts to his permanent appointment as officer in medical charge of the 2nd Battalion, 4th Gurkha Rifles. Captain S. G. S. Haughton is attached to the 1st Battalion, 3rd Gurkha Rifles, for duty. Captain H. S. Matson, whose services have been placed at the disposal of the Government of Burma, is appointed to Meiktila as special plague medical officer. The services of Captain J. L. Lunham have been placed at the disposal of the Government of India for temporary civil employ. The services of Captain W. Tarr and Captain H. Lack are placed at the disposal of the Governments of the Central Provinces and Burma respectively. Captain Godson and Captain Owens are posted for temporary duty to Eastern Bengal and Assam and Bengal respectively. Captain Maddock is posted for permanent duty to Bombay. Captain K. W. Mackenzie has been granted one year's furlough and study-leave from India, and Captain Leicester one month's leave. Lieutenant-Colonel Melville acts as civil surgeon, Simla East, during the absence of Captain Leicester.

THE ROYAL MILITIA OF THE ISLAND OF JERSEY.

Medical Company: Charles Noble Le Brocq to be Surgeon-Lieutenant (dated Jan. 8th, 1910).

TERRITORIAL FORCE.

Infantry.

5th Battalion, The South Staffordshire Regiment: Surgeon-Major James S. Wilson, from the 2nd Volunteer Battalion, The South Staffordshire Regiment, to be Surgeon-Major, with precedence as in the Volunteer Force (dated April 1st, 1908); to be Surgeon-Lieutenant-Colonel (dated May 7th, 1908).

Royal Army Medical Corps.

3rd North Midland Field Ambulance: Charles Algernon Stidston to be Lieutenant (dated Dec. 7th, 1909).

Sanitary Service: Charles Milton Fegen to be Captain, whose services will be available on mobilisation (dated Jan. 7th, 1910).

Attached to Units other than Medical Units.—Surgeon-Lieutenant-Colonel James Scott Wilson, from the 5th Battalion, The South Staffordshire Regiment, to be Lieutenant-Colonel (dated May 8th, 1908). Lieutenant-Colonel James S. Wilson resigns his commission and is granted permission to retain his rank and to wear the prescribed uniform (dated Oct. 31st, 1909).

For attachment to Units other than Medical Units.—George Denbigh Collen to be Lieutenant (dated Dec. 16th, 1909).

VOLUNTEERS.

2nd Bucks (Eton College) Volunteer Rifle Corps: Surgeon-Major Edward S. Norris, to be Surgeon-Lieutenant-Colonel (dated Dec. 10th, 1907); is granted the honorary rank of Surgeon-Colonel (dated June 10th, 1908); and resigns his commission and is granted permission to retain his rank and to wear the prescribed uniform (dated Dec. 12th, 1909).

Surgeon-General Francis W. Trevor, C.B., Principal Medical Officer in India, has been appointed an Honorary Surgeon to the King, vice Surgeon-Major-General C. D. Madden, C.B., deceased.

Correspondence.

"Audi alteram partem."

RESEARCH DEFENCE SOCIETY.

To the Editor of THE LANCET.

SIR,—This society was founded on Jan. 27th, 1908; we therefore hope that you will find room for an account of its work during the past 12 months. It has now about 2800 members and 130 associates. In addition to the branches which it had a year ago, it now has branches in Birmingham, Brighton, Edinburgh, Liverpool, Newcastle, and Shrewsbury. Other branches are in course of formation in Bath, Harrogate, Oxford, Ryde, and elsewhere. In other places it has corresponding members, representing the society and in touch with the central committee.

Since last January the following have consented to be Vice-Presidents of the society: Miss Balfour, Sir Robert Ball, Mr. Otto Beit, Mr. Neville Chamberlain, the Very Rev. William Delany, the Bishop of Derry, the Duke of Devonshire, the Rev. T. A. Finlay, the Rev. John Gwynn, the Right Hon. Jonathan Hogg, Viscount Iveagh, Lord Leconfield, Sir Henry Morris, Miss Isabella Mulvany, Lieutenant-Colonel Pilkington, Lord Stanmore, the Provost of Trinity College, Dublin, and the Archbishop of Tuam.

The Research Defence Society has now obtained a well-established position, and is becoming generally known throughout the country. There has been a great increase in the work of distributing literature, and many thousands of pamphlets have been sent out. There has also been a great increase in the number of addresses and lantern lectures given by members of the society. These addresses and lectures have been very useful, and have been well received by large audiences. We have three complete sets of lantern slides, illustrating (1) What we owe to experiments on animals in physiology and pathology; (2) Pasteur's life and work; (3) the prevention of tropical diseases: malaria, yellow fever, Malta fever, sleeping sickness. Duplicates have been made of most of these slides, and are at the service of all members of the society. Full catalogues and notes are sent with each set of the slides. The committee are always willing to send speakers to debates arranged by clubs, institutes, debating societies, or representative committees; but they do not feel bound to accept the "challenges" which they receive from anti-vivisection societies. The society held a stall at the Church Congress Exhibition last October, and a lecture was given in the Exhibition Building during the Congress.

Before the General Election we published a letter in the press calling the attention of all Parliamentary candidates to the society's work and to the evidence already published by the Royal Commission, and reminding them that the Commission has not yet published its final report and recommendations to Government. A copy of this letter was sent to each candidate. A circular letter has lately been sent to all the honorary secretaries of the branches and divisions of the British Medical Association, asking them to bring

before the members of the Association our need of more branches and corresponding members.

Since last January the following pamphlets have been issued: 1. Experiments on Animals during 1908 in Great Britain and Ireland. 2. Anæsthetics used in Experiments on Animals. 3. On the Use of Dogs in Scientific Experiments. 4. The Value of Antimeningitis Serum. 5. Recent Surgical Progress. 6. Advance in Knowledge of Cancer. 7. Some Thoughts on Causation in Health and Disease. 8. Reprint of correspondence in the *Times*, December, 1908–January, 1909. 9. Reprint of articles in the *Standard*, July 20th, 1909.

Other pamphlets are in course of publication, and a series of short popular leaflets is being prepared for more general distribution. A set of all pamphlets and leaflets lately published will be sent in due time to each member of the society. The society's work must be slow and cannot be judged only by the number of pamphlets distributed and lectures given. But we have abundant evidence that the society is gradually impressing on the public mind the facts as to experiments on animals in this country.

We remain, Sir, yours faithfully,

CROMER,
President.
SYDNEY HOLLAND,
Chairman of Committee.
F. M. SANDWITH, M.D., F.R.C.P.,
Hon. Treasurer.
STEPHEN PAGET, F.R.C.S.,
Hon. Secretary.

SCIENCE TEACHING IN SCHOOLS.

To the Editor of THE LANCET.

SIR,—In the appreciation of my address to the Public Schools Science Masters Association in your issue of Jan. 22nd the suggestion is apparently made that I am an opponent of literary training, as you say, "*pace* Professor Armstrong, we can see no opposition between a scientific and a 'literary' secondary education." Let me assure you that neither can I. Although I have no particular leaning towards either Smollett or Goldsmith, I could not sit at the breakfast table in peace if I felt that I had offended against Wendell Holmes.

With you, I earnestly hope that "the preliminary training of boys destined for medicine will in the future be in the best sense of the word literary." My scheme does not exclude Latin—in fact, the words I used are, "Boys properly prepared in the way I contemplate will learn far more Latin and even Greek, if desirable, than under the present system, even if the teaching be postponed until the last two years of school life." My address will appear in full in Mr. Murray's quarterly journal, *Science Progress*, in the course of this week and I hope that my arguments will receive the attention of medical men in particular.

I may point out that, to make Latin and Greek useful even for the limited purpose of interpreting technical terms, something more than mere knowledge of these languages is required. The technical jargon of the day is a hopeless maze, because of our failure to think broadly and act consistently when devising new names. Thus an *analysis* is an operation involving splitting up *by* and not *of* a chemist; *electrolysis* and *hydrolysis* connote splitting up *by* electricity and *by* water respectively, not *of* them. What, then, are we to suppose is the meaning of the modern term *hæmolysis*, for example—a splitting up *by* blood? *Amylolytic*, *proteolytic*, &c., ferments—are these ferments which split up *by* means of starch or of protein? Attention is called in vain to such inconsistencies.

Nothing could be more admirable than the way in which you insist in the penultimate paragraph of your editorial article that science studies must proceed little by little and line upon line. It is because I am so entirely in agreement with your final paragraph that during the past 25 years I have ever and again called attention to faults in the preliminary medical curriculum. The improvement of medical education must await the improvement of our secondary schools; I therefore would ask for the whole-hearted support of medical men in this crusade.

I am, Sir, yours faithfully,

Jan. 24th, 1910. HENRY E. ARMSTRONG.

ASEPSIS AND ANTISEPSIS.

To the Editor of THE LANCET.

SIR,—May I once more intrude on your space very briefly? As I have repeatedly said, I believe it is quite possible without the use of antiseptics during and after an operation to obtain aseptic results, and the admirable statistics brought forward by Mr. Percy Sargent demonstrate that this is the case. But the point for which I contend is that while such results may be obtained by specially skilled surgeons operating under the very best circumstances, the method is too difficult for ordinary practice, and that a reasonable use of antiseptics in addition to the other precautions, instead of being a disadvantage, will enable surgeons to obtain aseptic results more easily and with greater certainty, and under circumstances which are by no means ideally good.

The subject is so confused at present that I should like to see the formation of a small committee of surgeons from different hospitals—say half-a-dozen, with the addition of one or two bacteriologists—to go over every detail bacteriologically, and to study how each works in practice. They might thus be able to arrive at an authoritative statement as to what was efficient and what was inefficient, and what was practical and what was not. In this way a sort of standard of wound treatment might be laid down which would be of the greatest value to the profession.

Personally, I should be very pleased to do anything I could to forward the work of such a committee. My only desire in the matter is that the foundations which Lord Lister has so laboriously and successfully laid down are built upon with due care and simplicity and in a permanent manner.

I am, Sir, yours faithfully,

Harley-street, W., Jan. 24th, 1910. W. WATSON CHEYNE.

THE LATE DR. T. D. SAVILL.

To the Editor of THE LANCET.

SIR,—The death of Dr. T. D. Savill leaves, no doubt, a blank in the ranks of the medical profession, but in the ranks of his friends the loss is in every sense more intimate and is irreparable. His profession revealed his abilities as a physician, but only the closer circle of his friends and patients knew the man and were therefore capable of understanding and estimating his rare qualities of mind and heart. Life, its complications, difficulties, to many its impossibilities, are the inevitable moulders of character; and Dr. Savill did not escape the scalpel of discipline and of disappointment. No fewer than three times was he stricken down with rheumatic fever, leaving him each time crippled and nearly penniless, before he was thirty. Temperamentally a man of firm will, his early struggles emphasised this quality of mind; and the later obstacles which confirmed and stamped him as a man of action and determination gave him at times a certain abruptness of manner which was not always understood. The combative side of his nature—always present in strong characters—which was developed, without coöperation on his part, by the exigencies and struggles of life, concealed a tenderness of heart that never wore through the surface of his outward reserve. Suffering, at its first call, unlocked his heart; he was then the sympathetic minister of the poor, the lonely, the distressed. To all women he was as a brother. An inexorable student, a conscientious, a relentless, I may add often an exhausted, worker, he yet found time for the care and development of a rare appreciation of domestic life, of poetry, of the arts, which particularly endeared him to his friends. Apart from the inevitable publicity of his profession, his life was essentially private, and his dislike of all *réclame* innate. The friends who found him ever a charmingly simple comrade, loyal, cheerful, and calming, will preserve his memory, while they unite in deepest sympathy for his devoted wife.—I am, Sir, yours faithfully,

ANTONIO DE NAVARRO.

Court Farm, Broadwell, Jan. 24th, 1910.

To the Editor of THE LANCET.

SIR,—A leading characteristic of Savill was his great industry and capacity for work. He never spared himself and often insisted on carrying out details which might well have been relegated to others. His untiring energy

was well displayed during a recent visit to the Continent I made with him for the purpose of inspecting the leading hospitals there. All the arrangements for the itinerary were made by him. This entailed an enormous amount of work—the writing of letters late into the night and often early in the morning during the whole of the tour—but so admirably was every detail worked out that not a single hitch occurred in the arrangements. Savill's absorption in work caused him at times to appear abrupt in manner, and to be neglectful of those little arts which make for popularity. Thus it was that he was not understood by everyone. Only in this way can I explain the fact that he was never elected to the Fellowship of the Royal College of Physicians, a distinction which he had long since richly merited. I myself never had any difficulty in understanding and appreciating the real man. Savill was an undemonstrative man, but one *felt* the good that was in him and the loyalty of his friendship, and this was all-sufficing. During our long friendship I never heard him speak unkindly of anyone. He has been suddenly snatched away just when he was beginning to reap the full reward of a brave and strenuous life, and those who knew him—really knew him—mourn his tragic end.—I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 25th, 1910. HARRY CAMPBELL.

THE PANCREATIC REACTION IN THE DIAGNOSIS OF DUODENAL ULCER.

To the Editor of THE LANCET.

SIR,—I am much interested in a letter under the above heading in THE LANCET of Jan. 22nd, p. 269, and I can confirm the opinion expressed by Dr. G. Herschell as to the value of the pancreatic reaction in the diagnosis of duodenal ulcer in excluding functional hyperchlorhydria. It has probably escaped Dr. Herschell's notice that in my Hunterian lecture on Duodenal Ulcer and its Treatment, which was published in the *British Medical Journal* of Feb. 2nd, 1907, p. 248, will be found the following paragraph: "The presence of an excess of urobilin may indicate catarrh extending to the bile ducts, and the presence of pancreatic crystals, as shown by Cammidge's test, may point to catarrh extending up the pancreatic duct."

It should be borne in mind in estimating the value of this test that it is common both to duodenal ulcer and to cholelithiasis, both of which are associated with duodenal catarrh. In the former disease I have found it universally present, hence it has been my custom for some years in any case of doubtful diagnosis to avail myself of a pathological report, but in the latter condition the pancreatic reaction occurs only in about 70 per cent. of cases, so that in estimating the value of the test the presence of cholelithiasis has to be taken into consideration. My estimate of the value of this test has resulted from a considerable experience of duodenal ulcer, as, besides having operated on 150 cases, I have employed it in a large number of cases which were not operated on, but where the diagnosis was able to be subsequently verified.

I am, Sir, yours faithfully,

Park-crescent, W., Jan. 24th, 1910. A. W. MAYO ROBSON.

THE EYE-SIGHT OF MOTOR DRIVERS.

To the Editor of THE LANCET.

SIR,—The drivers of motor cabs, omnibuses, and other public vehicles are required to pass certain tests for vision, and thus one source of danger to the public is guarded against. It is doubtful if more than a very small proportion of the owners of private motor-cars ever make inquiries concerning the sight of their chauffeurs. The three following examples of gross defect of sight in drivers of private cars have recently come under my notice.

1. An owner who usually drives his car; myopia of high degree, wears glasses when driving, with which his vision is: R. eye, 6/36, imperfectly; L. eye, 6/60. He states that he has "no difficulty except when the light is dull."

2. Chauffeur, in the employ of a private owner. High degree of hypermetropic astigmatism. Left eye congenitally amblyopic; right sees 6/18 badly, and can be improved to 6/9, but with a fully correcting lens patient is uncomfortable and consequently does not usually wear glasses when driving. Occasionally, "if the light is bad," he wears glasses which partially correct the refractive error and give vision of 6/12.

3. Chauffeur, in the employ of a motor manufacturer and proprietor. He is not a regular driver but is often sent out with cars. He is blind in the left eye; sight lost after operation in childhood. In the right there is a congenital cataract and the sight is only 4/60, not improved by lenses. He stated voluntarily that he could not tell whether a vehicle was approaching or going from him until he was "right on it." I am, Sir, yours faithfully,

Harley-street, W., Jan. 24th, 1910. J. B. LAWFORD.

THE STATE REGISTRATION OF NURSES.

To the Editor of THE LANCET.

SIR,—In the heat and worry of electioneering I must be forgiven if I do not reply at length to Dr. J. M. Mason's letter, in which he comments on an excellent speech I made at the meeting of the Cottage Benefit Nursing Society. I thank him, at any rate, for replying to it in a very different spirit to that which is generally vouchsafed to me by the advocates of the registration of nurses.

Dr. Mason writes that "no one suggests, as Mr. Holland assumes, that because a nurse has passed a State examination therefore she has all the attributes of the best nurse." But unfortunately this is suggested, and certainly the public would be led to believe that in engaging a registered nurse they would be securing a competent and suitable nurse. Let us see what Lady Helen Ferguson, one of their ablest advocates, has written: "The continuance of a nurse's name on the register would be a *guarantee* [Mark this. S. H.] of her professional fitness—general fitness for employment"!

As a fact, it would guarantee nothing except that, perhaps many years before, she had passed what must necessarily be an easy examination, and had left her training school with a good character. And no guaranteeing body would really know anything of her afterwards. Registration would secure to the public neither professional fitness nor fitness of character. It is not the remedy for the present chaos, and a false remedy is worse than a known danger.

I learn that the nurses are not registering in the State of New York where they have a Registration Act, and I will prophesy that if passed in England, which is not likely, after the novelty of the thing has worn off, nurses in England, certainly the best, will not register. It may help the bad, of course. If anyone is interested enough to care to read my speech I shall be happy to send him a copy.

I am, Sir, yours faithfully,

Royston, Herts, Jan. 21st, 1910. SYDNEY HOLLAND.

"A VICTIM TO SCIENCE."

To the Editor of THE LANCET.

SIR,—As a neighbour of Mr. Cox, the "X ray martyr," and conversant with the facts of the case, I thank you for your annotation of Saturday last and for the insertion of Mr. F. W. Alexander's letter in support of Sir William Treloar's appeal. Mr. Alexander's statement is no exaggeration when he says "that a more pitiable case I have never witnessed in any human being during my 32 years' professional career." Words fail to express the pathetic condition of the man who has sacrificed health and fortune for the benefit of his race, and who bears his sufferings with heroic fortitude. Testimonies are daily to hand from leading members of the medical profession expressing their indebtedness to Mr. Cox, whose work they acknowledge to have been of the greatest service. Visiting him the other day he said, "When I was working with the doctors I little thought the help I was rendering would return to me in such generous sympathy as I am receiving from them now." Mr. Cox's medical attendant, Dr. R. Taylor, says: "It is not outside my professional office to mention the very great deal which this public action is meaning to him, both as a comfort to his fatal trouble and as a hope of leaving his family in some measure provided for." Mr. Cox is in his forty-seventh year, and when able to follow his calling was an enthusiast in scientific research. Generous and self-sacrificing, he lived for others, and was always ready to give the X ray treatment freely to the poor who could not afford to pay. Sir William Treloar in raising a fund for Mr.

Cox and his young family has done a kind and timely act. Help given is opportune, as the small savings of the dying man are practically exhausted. I may add that the average expenses for dressings alone to relieve his sufferings have averaged for the last two years £3 per week. I strongly support Sir William Treloar's appeal, who will be glad to receive subscriptions at his address, 69, Ludgate-hill, London, E.C.

I am, Sir, yours faithfully,

THOMAS RIPPON.

114, Downs Park-road, Clapton, N.E., Jan. 25th, 1910.

CLAMPS IN GASTRO-ENTEROSTOMY.

To the Editor of THE LANCET.

SIR,—Mr. Sinclair White's letter on the use of clamps in gastro-enterostomy recalls a case where I operated for hæmatemesis. Before making the anastomosis between stomach and bowel I explored the stomach through a free posterior gastro-enterostomy incision and completed the operation without clamps and also without special difficulty. I may add also that after one gastro-enterostomy where clamps were used another of my patients nearly succumbed from post-operative hæmorrhage.

I am, Sir, yours faithfully,

Huddersfield, Jan. 24th, 1910. NORMAN PORRITT.

"IN PIAM MEMORIAM."

To the Editor of THE LANCET.

SIR,—I should like to write a few words in your largely circulated journal "in memoriam" of the 100th anniversary of the birth of Dr. Henry Jeaffreson, which took place on Jan. 24th, 1810.

I may mention that he held the post of physician to St. Bartholomew's Hospital for a great many years, and although he never contributed any papers to the medical press or, in fact, wrote any work on medicine, enjoyed for years the confidence of medical men as consultant and did a very large practice among them. Unfortunately, when comparatively in the prime of life he contracted typhus while attending a medical student, and died after a short illness in December, 1866. Numbers of his pupils have attained high positions in the medical world and many more can testify to his valuable bedside instruction. His daughter and I, his nephew, and one of his ever grateful and affectionate pupils, will esteem it a great favour if you will publish this letter.—I am, Sirs, yours faithfully,

Dalston, N.E., Jan. 22nd, 1910. HAMPTON BREWER.

A BATH CENTENARIAN.—Mrs. Margaret Arthurs of Bath died on Jan. 17th. The deceased was born on June 5th, 1808.

WATER-SUPPLIES IN GLAMORGAN AND MONMOUTHSHIRE.—The proposals of the Glamorgan and the Monmouthshire county councils to supply portions of their respective counties with water were not approved by the last Parliament, and Bills which embodied these proposals were not carried further than the preliminary stages. Attempts will therefore be made in the next session to carry out the intentions of the county councils piecemeal. The Rhondda and Pontypridd urban district councils will ask for the sanction of Parliament to purchase the waterworks undertaking of the Pontypridd waterworks company at a cost of nearly £300,000. A portion of the Rhondda district and the whole of Pontypridd are supplied at present by the company, who are empowered to carry out additional works. The water-supply of both districts has long been of an unsatisfactory character, and the proposed purchase by the two district councils and the formation of a joint water board should be a solution of many difficulties which have occurred in recent years. The neighbouring urban district of Mountain Ash is also applying to Parliament for powers to obtain additional water-supplies from the Breconshire hills. In the Monmouthshire valleys a scheme involving an expenditure of nearly a quarter of a million sterling is being promoted by the urban district councils of Abertillery, Abercarn, and Risca. It is proposed to throw a dam across one of the Breconshire valleys and impound the water of the river Grwyne Fawr.

A VISIT TO THE MEAT-PACKING HOUSES AND ABATTOIRS OF TORONTO.

(BY A SPECIAL CORRESPONDENT.)

UP to 1907 there was no meat inspection in Canada, but legislation towards this end ensued because public opinion in Europe, and in Great Britain in particular, had been so greatly stirred by the publication in THE LANCET, and subsequently in other journals, and through various sources, of the condition of affairs in certain of the Chicago meat-packing houses. For the benefit of the foreign consumer, therefore, inspection of meat intended for export was decided upon by the Dominion Government, and the Meat and Canned Foods Act was framed, which received the Royal Assent, and came into force in the early part of September, 1907. By the provisions of this Act a meat inspection service of the Canadian Department of Agriculture was formed, and this is now carried on under the direction of Mr. J. G. Rutherford under the lengthy title of Veterinary Inspector-General and Live-stock Commissioner. This Act, so clearly devised for the protection of export trade, applies, only with certain qualifications, to the inspection of meat for home consumption. Consequently meat inspection in Canada is in a somewhat anomalous condition, for whereas meat intended for export is subject to thorough inspection, that intended for domestic food is subject to only such inspection as a particular province may arrange for. The passage of the Act has had the effect, however, of arousing public sentiment to a considerable extent, and as the matter now stands most of the large packing houses have voluntarily made themselves amenable to the meat inspection regulations as laid down for the export trade. Carcasses sent out from these establishments are marked with the crown and the words "Canada Approved," together with the number of the establishment. This departure has been attended with good results to all concerned, from the standpoint of both health and profit, for buyers accept it, and rightly too, as a guarantee that the meat is in a healthy condition, and are willing to pay a higher price. There are at the present time employed in the meat-packing establishments throughout Canada 68 veterinary inspectors, all of whom have received special training in meat inspection and have passed an examination as to their qualifications.

There are in Toronto several large meat-packing houses, one or two being comparable with the immense concerns in Chicago. Recently I have been visiting the principal of these, as well as the abattoirs of the city, and the impressions which I have derived as to the general arrangements here and the sanitary provisions are, as will be seen, very favourable. The first establishment to which I paid a visit is, I was told, the largest meat packing house in the British Empire—I refer to the William Davies Company, Limited. It is situated a mile or so distant from the city to the east, in close proximity to Lake Ontario and the railways. The building itself is four-storeyed and resembles an ordinary factory building of rather a bygone type. The superintendent showed me practically every nook and corner of the place and was most patient and courteous in answering questions and explaining fully the arrangements and conduct of the business. At this establishment hogs mainly are slaughtered. The killing is done on the second floor of a two-storey annex to the building, which is lighted and ventilated from above. The *modus operandi* is the same as followed in Chicago. The pigs are driven from the outside up inclined passageways, entering the annex when they reach the second floor. Each pig is then seized by its hinder legs, a loop knot is attached to them, and with head downwards at a convenient height for the slaughterer is slung on to a rail and is pushed along a passage on which stands the slaughterer, who cuts the throat of each animal as it passes along. At the other end of the passage are two men who unhook the pigs as they reach them and throw them into a large tank full of scalding water. The pigs are propelled along this tank by men with long poles to the further end, when their bodies are sufficiently scalded to allow of the removal of the bristles with ease. They are raised on to a moving platform and enter a machine which scrapes off almost all the bristles, those few remaining being removed by hand. The carcasses intended for the British market are

then singed. The work of driving the pigs into the building, killing, scalding, scraping, and singeing is done with the utmost despatch, certainly the feature of the whole proceeding being the great skill and celerity employed in the details of the various operations.

The inspectors in making ante-mortem and post-mortem examinations have a delicate and arduous task. All animals intended for slaughter are examined by a veterinary inspector before they are allowed to enter the killing floor, the animals passing in single file before the inspector so that no grave external mischief could escape notice. To those found to be diseased or showing suspicious symptoms a tag is affixed and they are held back until the killing for the day is over, when they are slaughtered separately. The post-mortem inspection takes place by two inspectors immediately after the bristles have been removed from the carcasses. Those carcasses which are obviously unsound, mainly from tuberculosis, or are found from any cause to be unfit for food, are forthwith marked with a condemned tag. The carcasses which pass favourably through this ordeal are placed on the special inspectors' rail, having their severed heads and tongues and all the intestines attached to them. Here they are all examined in detail, and those in which no fault can be found are passed for packing. Those concerning which suspicion is entertained are marked "Held" and set apart for further examination. These carcasses are, of course, the important ones, for it is on the latitude or rigour of these inspections that the measure of public protection depends. I visited a room in which an inspector was making a careful examination of suspected carcasses, and can state that his inspection throughout was of a most exhaustive character. Every organ was examined systematically and thoroughly, and I was convinced that nothing the consumption of which could be deleterious to the public would get through such tests. Tuberculosis is, of course, the disease on account of which the majority of animals and carcasses are condemned.

The carcasses of animals which have successfully passed inspection are now divided and put to hang in airy and well-ventilated chambers until the meat is considered to be in a fit state to be prepared for the market in various ways. A large proportion of the meat is placed in cold storage chambers, and in a modern packing house the refrigerating plant plays a very important part. The cold storage chambers at the packing house of which I am now writing are contained in a building recently built expressly for the purpose, which contains four storeys and a basement. It is by far the largest building of its kind in the Dominion, I was told. It has 24-inch walls, of which the outer layer is of vitrified bricks. The interior of these walls is covered with cork 4 inches thick, in two layers, no nails being used to keep the cork in position, but an ingenious arrangement of pegs; while the whole inner surface is coated with cement. In this way, whatever the outside temperature, zero can be maintained inside. The building contains 12 large chambers. Here the meat is quickly frozen and maintained in that condition frequently for some months.

Meat intended for the British market occurs principally in the form of ham and bacon, and I witnessed the processes through which it went before it was ready to be packed. Extreme cleanliness distinguished all these processes, and the care observed to avoid any kind of contamination is scrupulously minute. The meat before being packed for export is sprinkled externally with boric acid powder, a powder of $\frac{1}{2}$ to $\frac{3}{4}$ of 1 per cent. in strength only being used, and then placed in stout wooden boxes, the lids being forced down by hydraulic pressure. The boric acid sprinkling is no part of the cure of the bacon, but can be washed off previous to smoking in the place of consumption. More than 11,000 tins of canned meat are turned out each day from this establishment, many of the carcasses being brought from a neighbouring abattoir, but only a rather small proportion of the canned meat, the beef, is exported to Great Britain; by far the greater part is consumed at home. In the North-West, for obvious reasons, canned goods are greatly in request. All needful precautions seem to be taken to ensure that such food is prepared and sent out under good sanitary conditions. The rooms and workmen are clean and the meat is handled as little as possible, much ingenious machinery being used to this end in the processes through which the meat passes prior to canning.

The preparation of sausage meat is also carried on largely by this firm. In the making of sausage meat it is impossible to avoid a considerable amount of handling of the foodstuff, but the men engaged in this industry are required to maintain a high standard of personal cleanliness and are never allowed to enter the sausage-making room nor to touch the meat until they have thoroughly washed. Sausages, canned meats, and portions of carcasses intended for curing must be prepared only from carcasses or portions which have been marked "Canada Approved," and which on re-inspection have been found to be fit for food. In the basement of the main building are stored thousands of casks of pork preserved in brine, intended for the English market, in which all these formalities have been observed.

To sum up the impressions which I received from my visits I came to the conclusion that the proprietors of this enterprise had a due sense of their responsibilities. The veterinary inspection is thorough, the treatment of the foodstuff when passed as sound is cleanly. The building, though not new and perhaps not constructed in the manner best calculated to attain the most efficient sanitary results, is kept in a satisfactory hygienic state. Water is plentiful, for the establishment is close to the lake, and it is used lavishly in flushing the floors and for purposes of general cleanliness.

The meat-packing house which I next visited (Messrs. Gunns, Limited) is situated some seven miles to the west of Toronto, amid picturesque surroundings. The building this time was modern and well-adapted for its purpose. The time of my visit, the week before Christmas, was, from the standpoint of the proprietors, unfavourable, in that slaughtering was being done on a large scale, and the bustle incident upon preparing meat for the Christmas market was not conducive to tidiness and order. From my point of view the time could not have been better chosen. I was not expected, but owed my admission to the chief veterinary inspector, Dr. W. Wilson, who saw no inconvenience in my presence. Therefore, I saw the working of the establishment at high pressure, when the temptation to scamp any routine that might cause delay was considerable. The pace at which the work was being done was gruesome. Pigs were being slaughtered at the rate of 260 per hour, besides 200 or so bullocks daily. The building itself is quite new and a model of its kind. The slaughtering floor is at the top of the building, the best situation, perhaps, when both a sanitary and a commercial outlook are considered. An abattoir on the ground floor and not connected with other buildings is the ideal, but in a commercial house, in which all the by-products are utilised, and in which economy of space and labour are essential to a successful result, the most convenient position for the slaughtering department is in the building but not on the ground floor. By being placed on the top floor sanitation and convenience are alike served, for if the roof be constructed of glass and iron, as it is in the establishment I am describing, light and air in abundance are easily procurable from above and from every side. The convenience of the slaughtering department being placed at some height is that the by-products, and especially the blood, can be distributed far more easily by means of shoots and mechanical appliances to the different parts of the building in which they are to be treated. This abattoir appeared to me to fulfil in a most satisfactory manner all needful sanitary conditions. The light was good and ventilation excellent. Although, as I have said, pigs and beasts were being killed with the greatest celerity there was no unpleasant odour. The floor, made of hard and impermeable material, is continually flushed with water. The rooms throughout the building are all large and airy, and this is particularly the case with the numerous cold storage rooms. The lavatory and water-closet arrangements for the operatives are deserving also of high praise. The accommodation in this direction is plentiful and good.

A third meat-packing house (Messrs. D. B. Martin and Company) through which I went is situated a few hundred yards from the one just described. It was built at the same time, and with the exception of being somewhat small resembled it closely. I do not describe it in any detail, but the reader will imagine in it the presence of much the same technique and caution in the various processes, and with them gather that it is the general desire in Canadian packing-houses to recognise their responsibilities towards the public.

The last establishment which I inspected, the Harris Abattoir Company, Limited, is known as an abattoir, but it is a large abattoir in which the carcasses are hung after slaughter, and in which more than 65,000 cattle, hogs and bullocks, are yearly slaughtered, as well as some sheep

On the occasion of this visit, also, it was but three days before Christmas, and slaughtering was being done at express speed. Three hundred bullocks and hogs were being killed in the day and a large number of sheep. The slaughtering department is on an upper floor, with iron and glass roof and well ventilated and lighted from the top and sides. The floor is constructed as follows. First, double-tongued joists and grooved wood are laid down, then liquid pitch with insulating paper placed over, then another layer of pitch on which hot vitrified bricks are laid, the bricks are flushed with cement and all the interstices thoroughly filled. Here I observed at close range the slaughtering of bullocks. The animal is stunned by a blow from a pole-axe, and immediately after its throat is cut. When it has bled sufficiently the carcass is flayed, disembowelled, carefully inspected, slung up, divided from end to end, dressed, and hung in a hanging room. The animals which I saw killed in this manner appeared to die easily, and I was informed by the veterinary inspector that in his judgment beasts so killed suffer practically nothing. The fact must here be taken into consideration that the slaughterers are experts and so skilful and practised in delivering the blow that there can be no doubt that the animals feel little, if at all, after being hit. I am, however, aware that this mode of slaughtering is eyed askance by many, not only in Germany and Switzerland, while in these two countries quicker and more certain methods of slaughtering are in vogue. Cleanliness was scrupulously practised throughout the building, and water was used unsparingly to flush the floor in the slaughtering department. Possibly the feature that will most impress a visitor to an abattoir or to a meat-packing house, over and above the great celerity displayed in all the operations, is the remarkable use made of all the by-products. Literally nothing is wasted. The blood is conveyed down from the slaughtering-room to the department underneath, where it is subjected to treatment which renders it a valuable fertilising agent. The fatty portions of the animals are used for foodstuffs, for butter and lard substitutes. The oil is expressed from the fat and is transported to Germany to be employed in the manufacture of oleo-margarine. The remainder is a substance known as oleo-stearine, which in combination with cotton-seed oil forms a lard substitute so closely resembling the genuine article that it is said to be almost impossible even for a connoisseur in lard to distinguish the difference. The best straight bones are used in the manufacture of knife and toothbrush handles, and those that cannot be thus utilised are ground down for bone-meal, to be used as a food for fowls. From the white hoofs of the cattle buttons are made, and from the sinews of the animals glue. The intestines are cleaned and scraped for employment as sausage skins. The residue is used for manure.

The conclusions at which I arrived as a result of my visits to the Toronto packing houses and abattoirs were that they are conducted in a sanitary manner, and that the effect of the Meat and Canned Foods Act has been two-fold. In the first place, it has ensured for all those houses which do an export trade a thoroughly efficient meat inspection, and in consequence a thorough inspection of much of the meat used for domestic purposes. In the second place, it has aroused the Canadian public to a sense of the danger and foolishness of the existing lack of general meat inspection and has created a demand for such inspection. It must be borne in mind, too, that the inspectors are responsible for the sanitary and hygienic conditions of the establishments under their charge, so that when it is said an abattoir or meat-packing house is under Government veterinary inspection the statement is a guarantee that not only is the meat inspected properly but the establishment throughout is in an efficient sanitary state.

LONDON SCHOOL OF TROPICAL MEDICINE.—The prize of £50 awarded annually by Sir John Cragg, M.V.O., to a past or present student of the London School of Tropical Medicine, has been awarded to Dr. G. A. Turner of Johannesburg, for "An Account of some Helminths occurring among the South African Natives."—Arrangements have been made for lectures on tropical subjects to be delivered to nurses at the London School of Tropical Medicine, Royal Albert Dock, E. Any qualified nurse may attend the course, whether she intends proceeding abroad or not.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Ordinances and Regulations, University of Bristol.

THE council of the University has issued certain provisional ordinances and regulations for degrees, certificates, and diplomas, and pending submission of the ordinances to the court these will be in force as regulations.

The Lord Mayor's Hospital Sunday Fund.

Next Sunday the collections for this fund will be made in Bristol and the neighbourhood. The Lord Mayor, in issuing his annual appeal, points out that the ordinary income of the chief medical charities for the past year falls short of the expenditure by £7000. It is therefore hoped that a record sum may be realised. An encouraging feature is the large amounts contributed to the principal medical institutions by workpeople, the employees of the Imperial Tobacco Company and of Messrs. E. S. and A. Robinson having made handsome contributions.

The Children's Hospital, Bristol.

A well-known figure has disappeared from the Children's Hospital. Mr. J. T. Davies, who for 20 years was chief dispenser to the hospital, has just died. He was a most efficient and enthusiastic worker, and his death means a serious loss to the institution.

Bristol Dispensary.

At the annual meeting of this institution, Mr. Fenwick Richards in the chair, it was reported that 10,993 patients were treated during 1909, while the number of midwifery notes issued was 687, as against 536 in the preceding year. Expenditure had exceeded income by £22, but there was still a balance in hand of £130 14*s.* 7*d.* The Dispensary ying-in notes are for the provision of trained midwives and of medical aid when required.

The Royal Eye Infirmary, Plymouth.

The annual meeting of the subscribers of the Royal Eye Infirmary, Plymouth, was held on Jan. 19th under the presidency of the mayor. The medical report stated that during 1909 the out-patients numbered 2372, an increase of 128 compared with 1908. 300 in-patients had been admitted, against 278 in the previous year. The average daily number of in-patients was 24. The financial statement was satisfactory and showed the income was £1845 and a favourable balance remained.

Jan. 24th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Reconstruction of the East Dispensary: Formal Opening by the Earl of Derby.

THE Earl and Countess of Derby attended the opening ceremony in connexion with the new East Dispensary in Richmond-row on Jan. 13th. Lord Derby, having accepted the key and performed the opening ceremony, eulogised the work of the institution and thanked the committee for having given him the privilege of opening such a useful building. The Liverpool dispensaries, of which there are three in the city and which date from the year 1778, afford medical assistance to over 1000 individuals per week. This entails on the medical staff about 2500 weekly attendances, of which about 100 are paid at the homes of the patients. The cost of the new building and its equipment would be about £4000, of which £1413 have still to be raised.

Foreign Gift to the Liverpool School of Tropical Medicine.

The secretary of the School of Tropical Medicine has received a letter from the Compagnie du Kasai, dated Brussels, Jan. 8th, in which the president of the company says: "We have much pleasure in sending you the enclosed cheque for £100 towards the funds of the Liverpool School of Tropical Medicine as a slight recognition of the magnificent work your school is doing in the cause of tropical medicine."

Hospital Sunday Fund.

The collections on behalf of the Hospital Sunday Fund were made in the various churches and chapels of Liverpool

and district on Jan. 9th. The full amounts have not come to hand yet, but it is expected that there will be an increase on last year's collections. Ten ladies and gentlemen have each guaranteed 10 per cent. on the amount collected for 1910 in excess of the year 1909. Unfortunately, the collections for the Hospital Saturday and Sunday Funds for 1909 showed a decrease, and the guarantors were not called upon to pay anything. It is to be hoped that the joint contributions this year will be such as to demand the fulfilment of the generous offer of the guarantors.

Accommodation for the Feeble-Minded in the West Derby Union.

At a meeting of the West Derby guardians held on Jan. 5th, it was reported that the Mill Road Infirmary committee, having considered the question of the accommodation of feeble-minded and imbecile persons chargeable to the union, had resolved that, in its opinion, the time had now arrived when the guardians should again impress upon the Local Government Board the necessity for additional and separate accommodation being provided for such cases. The minutes of the committee having been confirmed, it was resolved that a committee, consisting of the chairman of the board, the chairmen of the various committees, the medical members of the board, and two of the lady guardians, be appointed to deal with the matter.

Jan. 24th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Lunacy in Glasgow.

THE lunacy statistics of the Glasgow parish council issued in its annual report form very interesting and instructive reading. This report is specially interesting in that it presents a unique nine years' record of the insanity rate in a great industrial area. During that time the proportion of pauper lunatics chargeable to the parish of Glasgow has risen steadily from 314·7 per 100,000 of the population in 1901 to 371·8 in 1909. Of course, it must be recollected in connexion with these figures that by far the greater number of the cases sent to asylums are incurable, and that in consequence there must be a steady accumulation of patients. To this must be added the fact that every year sees a growing disposition to send to asylums persons suffering from senile forms of mental weakness. The true method of viewing such statistics is from the point of view of the production-rate, and since 1901 this has fluctuated without increasing. For the past year it was 67·8, as against 68·7 per 100,000 in 1907–08. If all persons under 15 are rejected (for children do not *become* insane) and the persons certified insane are divided into two classes—viz., those under 45 and those over 45 years—we find that the rate exhibited by the former class is remarkably steady, the extremes being 8·2 in 1903–04 and 6 8 in 1907–08 per 10,000 of the persons living at these ages. The margin of variation is very small and any tendency that appears is in the way of improvement. On the other hand, the figures referring to the period over 45 years show greater fluctuation from year to year with a general tendency towards increase. This increase is, however, completely accounted for by the changes in industrial and social conditions, which favour curtailment of labour for the partially fit, and encourage the use of public institutions for the care of the feeble in mind and body. It is worth noting in this connexion that during the year 1907–08, which was a year of great depression in trade, the number of persons certified insane aged over 45 years was 193, being the largest number in any of the years under review, and showing a proportion of 18·4 per 10,000. If the last nine years are divided into three periods each of three years the annual average proportion per 10,000 of persons certified insane over 45 was: 14 for the first period, 13·4 for the second, and 17 for the last period.

Serious Outbreak of Diphtheria in Keith.

A rather serious outbreak of diphtheria has occurred in Fife-Keith. On Jan. 10th one case of diphtheria was reported, and up to the 17th 16 cases had been notified. From the medical officer's report it appears that, as regards the source, the only point common to all the cases was that they were receiving milk from the same dairy. The town council has had the matter under discussion and has agreed to issue an order against the dairy ordering it to be closed until otherwise ordered, and it has also been agreed to close the Fife-Keith infant school for a fortnight. One case so far has proved fatal.

Dundee Asylum Board and Incipient Cases.

The scheme carried on by the directors of the Royal Asylum for dealing with incipient cases at the infirmary is working very satisfactorily. At a meeting of the directors of the asylum on Jan. 17th Dr MacEwan said that the directors had every reason to be gratified with the results obtained. Twenty-two cases had been under treatment during the past year with a very considerable degree of success. Many of the cases had no doubt been prevented from relapsing into insanity, and many were saved from temporary aberrations, which might have necessitated their being sent to an asylum. It was a great improvement on the ordinary methods of dealing with these cases. The medical profession was very much interested in the system, and he noticed that the Edinburgh people had agreed to do something similar in the infirmary there.

Medical Inspection of Ross-shire Schools.

At a conference between the medical inspection committee and representatives of the public health committee of the county council, held at Dingwall, the draft scheme for medical inspection of children attending schools within the county was under consideration. The scheme provides for a working arrangement between the county council and the secondary committee, so that the services of officers will be at the disposal of both authorities. The county is divided into (1) the mainland, except certain west coast areas; and (2) the Lews, with the areas excepted from the mainland. The proposal is that the county medical officer of health shall, under an honorarium, devote part of his time to the work, while two medical officers shall be appointed, one for each of the districts, at a salary of £250 each per annum, with a specified scale for travelling allowances. The scheme is to be submitted to the various school boards for their observations before it is forwarded to the department for sanction.

Medical Inspection in the County of Aberdeen.

A conference between the county committee on secondary education and representatives of school boards in the county, to consider the amended scheme of medical inspection of school children, was held in the County Hall, Aberdeen. The chairman said that in compliance with the resolution of the last conference, the secondary education committee had carefully revised the scheme, and in framing it had kept in view the diverse views that were expressed at the previous conference, trying, as far as was consistent with efficiency, to meet them. The first important point the committee dealt with was the question of the employment of local medical practitioners. The committee came to the unanimous decision that no scheme would be approved by the Secondary Education Department which involved the employment of such, and if any school board wished to employ such, they would have to frame a scheme for themselves. The committee concluded that with regard to nurses it might be well in the meantime to leave them out of the scheme, the reason not being that it did not believe that nurses would be necessary to the working of the scheme, but because, while the inspection would be carried out under the county scheme, the treatment of patients must be carried out by the local school boards and nurses would fall to be appointed by them where necessary. The committee also considered the question of weighing machines, and found that these could be provided for £650 or so, as against the former estimate of £950. After the initiation of the scheme, the chief medical officer would be appointed, and they would be guided by his advice as to the extent of the assistance he might require. If all the boards joined in the scheme they might require two assistants, but otherwise only one. For the first year, including apparatus, the scheme would cost totally £1550 as against the former estimate of £2050. Dr. R. M. Wilson (Tarty) moved the scheme be rejected, but after discussion it was approved by 62 votes to 11, 6 declining to vote.

Jan. 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Surgeons in Ireland.

AT a meeting of the Council held on Jan. 20th, at the request of the Royal Humane Society, the President, Mr. J. Lentaigne, presented Mr. Alfred Sheridan, a Licentiate of the College, with the bronze medal of the society for saving a man from drowning on August 24th last in the sea near Westport, County Mayo. With some difficulty Mr. Sheridan brought the man ashore, and after about an hour's strenuous medical attention brought him out of danger. The President congratulated Mr. Sheridan on his brave conduct. This makes the seventh Licentiate of the Royal College of Surgeons in Ireland who has within the past few years received the recognition of the Royal Humane Society for saving life from drowning. The names of the seven are: Mr. S. M. Boyd, Mr. S. Cox, Mr. J. Cuffe, Mr. C. Eccles, Mr. T. C. M'Kenzie, Mr. J. D. Ryan, and Mr. A. Sheridan.

Irish Health Resorts.

A public conference of Irish municipal bodies was held a few days ago at the Dublin County Council Chambers for the purpose of considering the best means of taking action under the Health Resorts and Water Places (Ireland) Act, which enables local bodies to levy a rate not exceeding 1*d.* in the £ for the purpose of advertising the attractions of the health resorts and watering places of Ireland. A suggestion was made that local tourists' committees should be formed to control the special advertising of their respective districts, and that a central council should be established to create a demand and circulate such advertising literature. A resolution was unanimously passed to the effect that the delegates should invite their respective councils to strike the rate and to carry out a scheme of uniform advertising through a central council. The health resorts and mineral springs of Ireland have been sadly neglected, although in the first encyclopædic volume dealing with the subject of mineral and medicinal waters—which was the work of a celebrated Irish chemist and natural historian, John Rutty, M.D., and saw the light in 1757—the springs of Tralee, of Mallow, of Swanlinbar, and of Drumona are treated in essays of considerable length.

A Students' Union in Dublin.

By the formation of a Students' Union a movement has been inaugurated in Dublin which should have a highly favourable influence on the medical student life of the Irish metropolis. A circular has been issued announcing the first meeting and formulating its objects. It is there pointed out that the idea is well-known to English and Scottish medical schools. It is also impressed upon the reader that such an institution helps to build character as well as to facilitate study, and contributes to the removal of prejudices which can be effected only by "mixing with their fellows in a union." Sir Henry R. Swanzy has with his usual geniality joined the union, and headed the list of subscribers, to which the Dean of the school has contributed £25. The movement has started well and deserves every success.

The Abbey Sanatorium, Belfast.

At a meeting of the Belfast board of guardians held on Jan. 18th the report of Mr. Robert Hall, medical officer of the Abbey Sanatorium for Consumptives, was submitted on the work done during the six months ended Sept. 30th, 1909. It appeared that 584 patients were treated (16 more than in the corresponding period of 1908) and 319 were discharged, leaving 265 under treatment. The medical officer said wisely that he never urged patients, especially advanced cases of the disease, to return to their homes, but rather desired that they should remain in the sanatorium hospital and thus prevent the spread of infection outside—a fact which accounted to a large extent for the high tuberculosis death-rate. If another pavilion was built it would enable him to transfer all female patients from the hospital, and thus have not only a proper classification but improved treatment for those patients. He again referred to the insufficiency of the resident medical staff and the necessity of some other form of lighting than oil lamps, which interferes with the open-air treatment in the wards when artificial light is needed. During the six months the Abbey Sanatorium cost £6286 19*s.* 4*d.*, which included £694 18*s.* 3*d.* expenditure out of loans. This was a decrease on the amount expended in the half year ended March 31st, 1909, of £496 6*s.* 3*d.* The average weekly cost per patient, under all headings, amounted to 16*s.* 8½*d.* This cost is less than for the half year ended March, 1909, when it was 17*s.* 10½*d.* It also appeared that 188 patients had passed through the sanatorium in the half year under review and were now earning money for their families, their "working capacity" having been restored. There can be no doubt that the Abbey Sanatorium for Consumptives, one of the largest and most efficient of the kind established under the Poor-law system in the three kingdoms, is doing most admirable work, and its establishment is a great credit to the Belfast board of guardians. But it is deplorable to know that there are at present 87 consumptive patients—viz., 45 males and 42 females—in the Belfast Union Infirmary for whom there is not room at the Abbey Sanatorium. In Mr. Hall's report full details are given as to the number of patients discharged, with their age, sex, occupation, and the average duration of their stay in the sanatorium. They are classified as "greatly improved," "improved," "not improved," "not long enough in Abbey," and "died."

The Disposal of Belfast Sewage.

The members of a subcommittee of the Belfast Harbour Commissioners waited on the city surveyor of the Belfast corporation and desired him, as engineer to the corporation, to lodge plans with regard to any work he proposed doing over the property of the Harbour Commissioners. They pointed out that a storm overflow does not include a sewer through which crude sewage can be discharged into Belfast Lough, their estate; and made other recommendations with regard to crude sewage. The matter is now in the hands of the corporation.

Dungiven Dispensary.

Dr. Arthur G. Martin, medical officer of the Ballykelly Dispensary district, has been elected medical officer of Dungiven Dispensary, county Derry, in place of the late Mr. Michael Higgins, at a salary of £100 per annum, and an addition of £15 as medical officer of health.

Jan. 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Floods.

THE flooded Seine is seriously affecting the city, houses are being rendered uninhabitable, traffic is suspended, and the greatest hardships and privations are being endured. Worse to think of is that the medical sequelæ are bound to be terrible, as the contamination of drinking water and soil begins to bear fruit.

Treatment of Tuberculous Fistulæ by Injections of Subnitrate of Bismuth.

In the treatment of patients suffering from tuberculous fistulæ M. de Fourmestraux has used a modification of Beck's method, in which injections of a mixture of vaseline and subnitrate of bismuth are given. At a recent meeting of the Société de l'Internat des Hôpitaux he gave details of 11 cases treated in this way. The results were excellent in such conditions as tubercle of the testis, trochanteric fistulæ, spina ventosa, and the like, in which the tuberculous cavities were shallow and the fistulæ were small, but when the cavities were deep and the fistulæ extensive the results were less satisfactory. M. de Fourmestraux referred to the cases of Eggenbrener and Kaufmann, in which toxic phenomena were observed, and said that a female patient had shown symptoms of illness after the injection of 80 grammes of a mixture containing 20 grammes of subnitrate of bismuth. He considered that the principal advantage of Beck's method was its great simplicity, but it was not free from danger, and before making use of it the surgeon should satisfy himself as to the state of the patient's liver and kidneys.

Tubal Pregnancy following External Migration of an Ovule.

At a meeting of the Surgical Society held on Jan. 5th M. Marion presented a report on a case which had been brought before the society by M. Silhol. The patient was a young

woman who on Sept. 15th was suddenly seized with severe abdominal pain, accompanied by pallor, cold perspiration, faintness, and all the symptoms of internal hæmorrhage. M. Silhol did not see her until 48 hours afterwards, by which time the symptoms had improved. The presence of fluid in the pouch of Douglas suggested to him the diagnosis of hæmatocele from the rupture of an extra-uterine pregnancy, but the circumstances seemed to him very strange because he was convinced that the woman could only have been fertilised between Sept. 3rd and 7th. In the course of a few weeks he found in the left side of the pouch of Douglas a steadily growing tumour which presented all the characters of a tubal pregnancy. An operation was accordingly performed at which there were found in the pouch of Douglas both an encysted collection of blood and an extra-uterine pregnancy in the ampulla of the left Fallopian tube. A further examination of the specimen after removal showed that this tube was pervious but that the adjoining ovary had undergone cystic change. On the right side the ovary was quite normal, with a recent cicatrix in the corpus luteum, and the Fallopian tube was obliterated. It was therefore obvious that the case was one of "crossed pregnancy" or external migration of the ovule. The hæmatocele was probably due to exceptionally free hæmorrhage accompanying the process of ovulation.

The Pasteur Institute and Radium Research Work.

The Pasteur Institute has decided to contribute 400,000 francs towards the fund for the erection of a large laboratory, the plans of which have been submitted by M. Nénot to the University of Paris, and which, under the name of the Palais du Radium, will be used for the study of radio-active phenomena and their therapeutic applications. M. Nénot will commence operations at once. The contribution offered by the Pasteur Institute is derived from the accumulated arrears of the Osiris bequest.

The Treatment of Deformity due to Spastic Diplegia.

In order to correct the deformity produced by spastic diplegia (Little's disease) M. Pierre Delbet performed osteotomy on each femur of a young girl whom he subsequently showed at a meeting of the Academy of Medicine held on Jan. 11th. A 7 months child, she did not walk until she was 3 years of age, and it was then that the curvature of her lower limbs was discovered. When she was 14 years of age an attempt was made to correct this by dividing the adductor muscles on both sides and also the two tendons of Achilles, and three years afterwards she underwent two further operations. As her style of walking was still very unsatisfactory recourse was had in the end of last April to a directly transverse section of each femur below the trochanters, and after rotation of the limbs to the required extent they were fixed in a plaster apparatus. After 37 days it was found that some degree of consolidation had taken place, but a tendency to renewal of the curvature still existed. An extension apparatus was therefore applied to each limb and retained in position for 12 days, after which treatment by massage and movement was commenced. At present—i.e., six months after the osteotomy—the girl walked well and easily.

Fracture of the Fibula and Epiphyseal Detachment of the Lower End of the Tibia.

At a recent meeting of the Surgical Society M. Broca said that he had seen six children suffering from epiphyseal detachment of the lower extremity of the tibia, together with fracture of the fibula, producing exactly the same effect as Dupuytren's fracture in the adult. He had special opportunities of investigating this lesion in three cases, radiographs of which were shown. He said that such cases were evidently not exceptional. M. Kermisson said that in some cases this lesion did not cause much displacement, but in others the displacement was considerable.

Jan. 24th.

TWENTY-ONE YEARS' MEDICAL SERVICE.—At a meeting of the Long Ashton (Somerset) board of guardians held on Jan. 18th a vote of thanks was awarded to Mr. William Monckton, M.R.C.S. Eng., L.R.C.P. Edin., who resigned the post of medical officer and public vaccinator for the sixth district after 21 years' service.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A Simplified Method of Disinfection of the Skin.

AT a recent meeting of the Berlin Medical Society Dr. Federmann read a paper on the disinfection of the skin according to Grossich's method. This procedure consists in painting tincture of iodine on the skin with careful avoidance of any previous washing. The tincture of iodine is applied twice to the skin within a few seconds and immediately after it has dried, which it usually does in less than half a minute, an operation may be performed. Dr. Federmann pointed out that the usual method of disinfection by washing with soap and water was very tiresome and not perfectly reliable because it brought the micro-organisms from the deeper layers of the skin to the surface. The theory of Grossich's method was that the alcohol hardened the skin and dissolved the fat, so that the iodine could easily penetrate to the deeper layers of the skin and destroy the bacteria there. When the skin was previously washed with soap and water the epidermis became swollen and less permeable to the iodine, so that its disinfecting action was hindered. Dr. Unger confirmed the satisfactory results obtained by Grossich's method. He called attention to its quickness, which made it specially applicable in urgent operations such as those for hæmorrhage and incarcerated hernia, as the patient might be prepared for the operation within two minutes. Primary union was obtained in 25 laparotomies in which the skin was sterilised by this method before operation, the scar tissue being even stronger than the skin which it replaced. A further advantage of disinfection with iodine was that the shock occasioned by washing with soap and water was completely avoided, a circumstance which was sometimes very important, as, for instance, in cases of peritonitis. Dr. Schindler reported that of 54 cases of laparotomy in which this method was used 53 recovered without reaction. It is advisable also to paint the sutures with the tincture, and to repeat this procedure as often as the dressing is changed. In recent injuries painting of the surroundings of the wound with iodine made other disinfectants unnecessary. Shaving of the skin preparatory to an operation should be performed without soap and water.

Paying Wards in Municipal Hospitals.

The Berlin municipal authorities have lately sanctioned the establishment of paying wards in the municipal hospitals. A proposal to this effect was made in the council more than a year ago and a paragraph on the subject appeared in THE LANCET of Dec. 12th, 1908. In consequence of this innovation the hospital committee of the council recently asked the opinion of the chief physicians and surgeons as to their fees for attendance on these better-class patients. The question has long been a subject of discussion in medical circles, especially among medical men connected with private sanatoriums, who feared that they might suffer from the competition of the public hospitals. The question of fees for private patients in these hospitals was also discussed at the last general meeting of the well-known medical defence union called the Leipziger Verband, and a motion was adopted to the effect that patients treated in the paying wards should be obliged to remunerate the hospital physicians or surgeons just as in private sanatoriums. The Berlin branch of the Leipziger Verband, in accordance with the above vote of the general meeting, has therefore addressed the medical staff of the Berlin municipal hospitals, asking them to delay replying to the municipal hospital committee until the question has been submitted to the committee of the Leipziger Verband. It must be recognised that the Leipziger Verband has by degrees acquired an influence which even the members of hospital staffs and other authorities cannot disregard.

Infants in High Altitudes.

Professor Neumann of Berlin, writing to the *Deutsche Medizinische Wochenschrift*, describes the condition of the infants in Alpine districts. During a stay at Arosa in Switzerland, a place situated about 1800 metres above the sea-level, he found that breast-feeding was comparatively rare. Of 97 infants, 56 were suckled, but of these only 17 were more than three months old. Of the 56 infants

which were suckled 28 had artificial food together with the mother's milk. Notwithstanding this unreasonable feeding of the infants their average mortality for the last nine years was only 4·9 per cent., and this satisfactory result is certainly due to the altitude of the place. The dwellings were not too hot in summer, and other contributory causes of the low mortality were the dryness of the air, the absence of stormy weather, and the frequency of sunshine, which allowed much time to be spent out of doors. In Chur, the capital of the canton, situated a few miles from Arosa, about 600 metres above the sea-level, where the infants were fed in the same way, the infantile mortality was 11 per cent., while for Switzerland in general it was 18·9 per cent. Injudicious methods of feeding are in the higher districts counterbalanced by the climatic facilities for passing the day in the fresh air and sunshine. For the same reason rickets and convulsions and other nervous diseases of infancy are non-existent in Arosa. Professor Neumann has therefore suggested that rachitic infants and young children might derive benefit from a stay in the Alpine health resorts. The mountains are just as healthy for them as the seaside, and still more advantageous for nervous constitutions.

Jan. 24th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Lourdes and its "Cures."

THERE has recently been held an open discussion in the hall of the "Associazione Sanitaria" of Milan on the miraculous cures effected at Lourdes, the protagonists being the Padre Gemelli, a medically trained ecclesiastic, and the clinical professors and *privat-docents* of the Lombard University, Pavia, and the Lombard capital, Milan. The Padre, introduced by the President, Dr. Fortanini, professor of clinical medicine at Pavia, addressed his large and promiscuous audience, medical and lay, as a physician, not as a Churchman, premising, however, that before a cure effected at Lourdes could be recognised by the Holy See it must be examined and approved in Rome first by the Congregation of Rites, then by the "Consultatori," then by the cardinals, and finally by the Pope, whose decision is definitive. The "cures," proceeded the Padre Gemelli, have been estimated at over 7000, but, he added, about one-half that number—say, 2500—would be nearer the truth. Out of these he selected two cases as typical, one of Pierre Rouder, who in 1867, when 44 years old, fell from a tree and fractured the femur at the upper third. By neglect and subsequent ineffective treatment the bones were never properly united at the seat of fracture; a purulent sore supervened, and amputation was recommended. Rouder, however, bethought of him of Our Lady at Lourdes, and, sure enough, on entering the pool, he remained in it but a few minutes to emerge "cured." The second case, this time medical, was that of Joan Joulasne, born in 1872, and found in 1895 to be a tuberculous subject. Besides a crural abscess she had a spinal curvature presenting all the characteristics of Pott's disease. She, too, sought relief in the *piscina*, apparently without success at first, till the procession of the Sacrament went by, and then the waters of the pool took effect. She came out "cured" and no longer a hunchback. Having resumed his seat amid applause due to his eloquence, though by no means in every case to his reasoning, the Padre Gemelli's clinical report had to run the gauntlet of the medical experts, among whom Dr. Bonardi, *privat-docent* in medical pathology at Pavia, was the most trenchant, claiming for science a far more vigorously checked report of Rouder's "cure" than the Padre Gemelli's, and maintaining that the girl Joulasne was a neurotic, hysterical subject whose "cure" must be ruled out, because, demonstratively, her malady was a pseudo-Pott's disease such as is not unknown in similar tuberculo-neurotic patients, whose malady, under special conditions of novelty and emotion, seems to "lift" or disappear for a time, only in most instances to return. Criticism, much to the same effect, followed from the other experts, whose arguments seemed cogent in the ratio of their clinical knowledge and experience, till after a few of these (certainly the least authoritative) had given a reserved judgment or even a provisional adhesion to the Padre's induction, the Padre himself wound up the debate with an eloquent harangue. After which the assembly broke up, medical science to retain its opinion, shared by the more intelligent of the lay public.

Medico-Missionary Enterprise in the Post-Renaissance.

Interest, romantic as well as scientific and historical, clings to the record of missionary exploration in the late sixteenth and early seventeenth centuries. The "Dark Continent," the Far East, and South America were the chosen field of the explorers, mainly Jesuit in faith and Portuguese in nationality, who, in many cases, combined ardent nature study with religious zeal, and owed much of their proselytising success to the medical knowledge they imported from Europe and applied to the ailing aborigines. The whole subject has yet to be dealt with by the English-speaking historian, who will acquit himself imperfectly of his task if he fails to give the prominence to the medical equipment with which the emissary of the Church made the physical well-being of his savage *clientèle* the "condition precedent" of his Christianising propaganda. Materials have lately accumulated for him in the publications of the Padre Beccari and other lights of the Society of Jesus, under the title of "Rerum Æthiopicarum Scriptores Occidentales Inediti a Sæculo XVI. ad XIX. curante C. Beccari, S.J.," Vol. IV.; and at least two other treatises which have just seen the light, thanks to the Padre Emmanuele Barradas, S.J., and the Padre Emmanuele D'Almeida, S.J. All three have issued from the Roman press, the publisher being C. De Luigi.

Jan. 22nd.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Lodging-houses and Tuberculosis.

Dr. Okolicsányi Kuthij, secretary of the Committee for the Prevention of Tuberculosis, has made a personal inspection of about a hundred lodging-houses in Budapest, and reports the results in *Tuberculosis* (No. 1, 1910). Insanitary conditions were the rule. Dr. Kuthij was assured by several lodging-house keepers that all blankets were washed "at least twice a year"! In Budapest the lodging-houses, the majority of which are situated in the manufacturing districts of the city, shelter more than 20,000 people every night. The health department is apparently acting on the theory that it is impossible to have them kept clean. The old argument against tenement-house reform was that the tenement-dweller got as good as he deserved and that he would rapidly defile the most immaculate buildings. At the present time, however, it is recognised that this notion was fallacious and that our floating population is at least entitled to fresh air, to an occasional bath, and to reasonable changes of bed-linen and blankets. If our officials will give more careful attention to dwelling-house sanitation, and if the new laws advocated by Dr. Kuthij are enacted, the changes brought about in the tenements might be advantageously introduced in the manufacturing districts.

Early Recognition of Tuberculosis.

In continuation of the system mentioned in this column on July 31st, 1909, the State Board of Health of Hungary has once more issued for distribution to medical men throughout the country a circular on the early recognition of tuberculosis. The attention of the medical men is directed to the laboratories at the different county dispensaries, and it is announced that examination of sputum of patients supposed to be tuberculous will be made without cost at any time.

Intestinal Putrefaction in Catarrhal Jaundice.

Dr. F. Tauszk reports a case of catarrhal jaundice in the *Orvosok Lapja* of Jan. 6th in which he utilised the Blumenthal test to determine the degree of intestinal putrefaction. The estimation of putrefaction is based on the amount of ethereal sulphates present in the urine. This method, however, is not universally accepted, because some investigators claim that not all the aromatic bodies which are produced in the intestine take the form of ethereal sulphates. In Dr. Tauszk's case this test would have shown the intestinal putrefaction to have been abnormally diminished in degree, because on certain days

the indican excretion in the urine was practically nothing, and it was not until convalescence was established and a sufficient quantity of bile was present in the intestine that any considerable amounts of indican were to be recognised. The quantity of phenol excreted, however, was sometimes more than double the normal amount. He believed that the volatile fatty acids in the urine afforded a better means of making an estimate as to the degree of intestinal acid fermentation, but that an absolute index to the degree of putrefaction in the intestine could not be obtained from a mere estimation of the indican, phenol, and ethereal sulphates. In addition to these it was also necessary to determine the amount of volatile acids in order to find out whether acid fermentation might not be taking the place of the production of aromatic bodies.

Jan. 24th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

PLAGUE returns for the week ending Dec. 18th, 1909, show 6159 deaths, compared with 5736 in the preceding week. Bombay Presidency reported 657; Bengal, 366; the United Provinces, 2945; the Punjab, 902; Burma, 65; the Central Provinces, 546; Mysore State, 80; Central India, 28; and Rajputana, 459. The steady diminution of plague throughout Burma, which seemed to promise the total disappearance of the disease from the province at a not distant date, has been interrupted by a recrudescence of the epidemic in Upper Burma during the past fortnight. Several fresh cases have appeared at Sagaing, some miles south of Mandalay and on the opposite bank of the river, where during the past season the principal plague camp was established. This being a river station and a considerable centre of river-borne trade, the chances of the spread of the disease from there, both up and down stream, are greater than would be the case with a more isolated place, and it may be said that the tendency of plague to confine itself chiefly to the towns and villages situated on the river has been a characteristic of the disease in Upper Burma from the beginning, proving fairly conclusively that the infection is spread to a large extent by the river traffic. The local plague and sanitary authorities have, however, taken early and energetic steps to combat this new outbreak, and with the experience of past years before them it is to be hoped that ere long their measures and precautions will prove effective in reducing the virulence of the disease at the place where it has now again appeared, and in checking its spread to other parts of the district.

Fatal Case of Hydrophobia.

A sad case of hydrophobia has occurred at Bangalore in the 76th Battery, Royal Field Artillery, which has just returned from a practice camp at Birsandra. Gunners Collins and Maclaughlan were bitten by a mad dog. Collins developed hydrophobia and was brought to hospital at Bangalore for treatment. The patient's spasms being very severe it was considered necessary to chloroform him. In doing this Captain G. De la Cour, R.A.M.C., was bitten by Collins, while Lieutenant M. J. Lochrin, R.A.M.C., Assistant Surgeons Dunn and White, four European orderlies, and one native ward boy were bespattered with the patient's saliva, some of them also receiving minor scratches. Collins died. The Principal Medical Officer issued orders directing all those who attended the deceased to proceed immediately to the Pasteur Institute at Coonoor with Gunner Maclaughlan for prophylactic treatment.

The Pasteur Institute of India.

The appeal which is now being made for half a lakh of rupees for the Pasteur Institute at Kasauli should be generally responded to. The young Maharajah of Patiala has taken the lead in the matter, and his State contribution of Rs.5000 should stimulate subscriptions. With such a sum the authorities of the institute could not only provide full accommodation for indigent patients but could carry out various improvements that are urgently needed. In short, the institute could be put in such a position that its usefulness would be enormously increased and adequate provision could be made for the steadily increasing number of cases. The committee of the Indian Tea Association, Calcutta, has expressed general approval of the proposal to establish a Pasteur Institute for Eastern Bengal and Assam.

Dec. 29th, 1909.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENTS.)

Retrospect of the Public Health in 1909.

THE past year in China has not been marked by any big epidemic outbreak. Plague has been present in Hainan and Hong-Kong, but no cases have been notified elsewhere. Cholera occurred to a limited extent in the provinces of Anhui and Shantung and a few Europeans died from it in Shanghai and Chefoo, but in neither of these cities was there an epidemic. In the provinces of Shansi and Kiangsu many thousands of cattle died from cattle-plague and many cases of small-pox, measles, and pneumonia have been noted as occurring among the natives there. At Suningfu there were a good many cases of influenza and diphtheria. In Shanghai, where there is the biggest foreign population in China, the health has been generally good, though diphtheria, sporadic dysentery, and endemic amœbic dysentery have been present to some extent. There was also an outbreak of relapsing fever in Shanghai Municipal Gaol. During the past summer I found the spirillum obermeieri in two cases in Peking, the first time it has been seen here. In the Yangtze Valley, notably at Ichang, malaria was rather prevalent and accounted for a good many deaths. It is impossible to give accurate figures. In Korea cholera appeared at the end of August in the capital, Seoul, and was attended by a high mortality. Last October there was a report in a local paper about an epidemic of Shantung fever, which was said to be in "painful evidence." The symptoms were: "Temperature fluctuating from normal to 104°, without pain, and the ordinary functions in no degree affected, and nothing to account for it. It lasts six weeks and is not considered serious." Throughout the whole empire tuberculosis still continues its ravages and is the chief cause of death. No amelioration of this state of affairs can be expected until a radical change takes place in the national customs. With the exception of the Mahommedan part of the population (an inconsiderable proportion) the Chinese are not a milk-drinking race, and this factor, which plays such an important part in the causation of the disease in other countries, may be ruled out of court here. But overcrowding, bad ventilation, unrestricted spitting indoors, and ill-feeding among the poor are present to an extent that entirely favour the transmission of the bacillus from one person to another. Indifference to life and apathy to every hygienic problem are marked characteristics of Chinese officialdom, and while progress in almost every other line is reported, such as the opening of provincial legislative assemblies, the building of railways without foreign assistance, and widespread educational reforms, the high sick- and mortality-rates continue to pass unheeded, probably because of the lack of knowledge of better conditions, especially in the absence of any census. In no other profession is reform more urgently required than in medicine. A distinct feature in China is the deeply-rooted national antipathy to the surgeon's knife. At inquests, unless there are marks of external violence, there is no means of judging the cause of death. Such hope as there is for the medical betterment of China lies in the fact that the people appreciate the work of foreign doctors. Every missionary and other hospital is overcrowded, and nothing but steady progress can be chronicled as regards the work of our foreign colleagues who come from Europe and America to take up work here.

Presentation to Dr. J. C. Thomson.

An interesting event took place on Dec. 10th, 1909, when at a full meeting of the Senate of the Hong-Kong College of Medicine Dr. J. G. C. Thomson, who since 1891 has been secretary of the college, was on his retirement presented with a piece of plate. The presentation consisted of a massive silver tea-tray bearing the following inscription: "Presented to John Christopher Thomson, M.A., M.D., D.P.H., D.T.M. and H., by members of the Senate, the licentiates, and the students, of the Hong-Kong College of Medicine, in token of their esteem and in recognition of the very valuable services rendered by him to the College during

the past 21 years. December, 1909." In making the presentation Dr. Francis W. Clark, the Dean, said that the college was now an unquestioned success. This was due in no small measure to the indomitable perseverance, pluck, and energy of Dr. Thomson. In his reply Dr. Thomson thanked his colleagues and the present and past students for their generous testimony of the feelings with which they viewed his approaching departure from the colony, and said that his work among them had been almost unmitigated enjoyment. The hours which he had spent with his classes, especially those of tropical medicine, were among the happiest hours he had spent in the colony.

Dec. 20th, 1909.

Obituary.

WILLIAM PAGE MAY, D.Sc., M.D. LOND., F.R.C.P. LOND.,

FELLOW OF UNIVERSITY COLLEGE, LONDON, AND LECTURER ON THE PHYSIOLOGY OF THE NERVOUS SYSTEM AT THE COLLEGE.

THE sudden and unexpected death of Dr. William Page May at Brighton on Wednesday, Jan. 19th, has come as a shock to a wide circle of friends and acquaintances. He had gone to the seaside for a few weeks for the sake of his wife and his nine weeks old daughter, and it was there that he was suddenly struck down with an attack of right hemiplegia with aphasia which terminated fatally in 24 hours after its onset. He had always been delicate and lately had to seek advice on account of cardiac symptoms, but nothing in his condition had appeared so serious as to lead anyone to anticipate such a sudden and tragic ending.

May was early in life left an orphan, but his childhood and boyhood were tended by an aunt whose loving care he repaid with the warmest affection. This aunt died only a few years ago. He lived with her at Blackheath during his school days and his student days at University College and Hospital. His first scientific love was chemistry, and to the study of this subject he applied himself with characteristic keenness and assiduity until he took his B.Sc. degree at the University of London. He elected to study medicine, and in his career he created almost, if not quite, an academical record. He took his M.B., winning the gold medal in medicine in 1888, and two years later took his M.D. degree, also winning the gold medal in medicine. He served the usual house offices at University College Hospital, and he also was house physician at the National Hospital for the Paralysed and Epileptic, Queen-square. It was this last appointment which determined his later work, while he always had a peculiar aptitude for, and love of, the study of nervous diseases. Intending to embark on consulting practice in London, he applied for and obtained the post of pathologist to the Victoria Park Hospital for Chest Diseases, but almost immediately his health gave way and he had to go abroad. He travelled for two years in Egypt and then was invited to take charge of and reorganise the baths at Helouan, a work which he carried out in a characteristically thorough fashion, visiting all the principal bathing establishments in Europe in order to incorporate in the new installation at Helouan the latest improvements in the apparatus suited for treatment at such places. His great gift of languages helped him in this, for he spoke French, German, and Arabic fluently, and Italian fairly. At Helouan May remained for several years, and he rendered it an attractive and beneficial resort of European reputation. He only gave it up in order to devote himself to what he had long wished to cultivate—the study of the physiology of the nervous system. He applied for the post of lecturer on the subject at University College, London, and was promptly appointed. He had been elected a Fellow of the Royal College of Physicians of London in 1902, and later took his D.Sc.

Without attempting to recapitulate all the circumstances of May's busy life we may instance some examples of his range of literary achievement. He published numerous papers, some in the Philosophical Transactions of the Royal Society, some in the *Journal of Physiology*, some in *Brain*, some in German scientific journals, and some he read before the British Association. All were characterised by the same industry, the same care, the same illuminating insight, but alas, his best work is left unfinished. It is to be hoped that someone may be found to take up the threads which have dropped from his fingers, and carry his work on to completion. But the purely scientific was only one side of May's character. Those who knew him best, no matter how much they may admire his scientific work, will always regard him as one of the best clinical physicians they have ever met. Those who did not know him in any of his professional capacities will always think of him as one of the kindest and most delightful of men, full of the finest spirit of fun and *camaraderie*, as keen on cricket and golf and fishing as he was on his scientific pleasures, and always ready, nay, eager, to make a thing go off well, no matter what it was, and a most sympathetic and cheering companion when dark days came upon his friends. His was a character with many facets; some saw one, some another; it was only the privilege of a few to see most of them, and even they could not claim to see all. Yet it may truly be said that those who knew him best held him in the deepest affection—no one knew him at all without having for him the greatest regard. The sympathy of a wide circle of his friends will be with his wife and infant daughter in their terrible and sudden calamity.

STANLEY BEAN ATKINSON, M.A., LL.M. CANTAB., M.B., B.Sc. LOND., L.R.C.P. LOND., M.R.C.S. ENG., J.P.

THE late Dr. Stanley Bean Atkinson was a remarkable public figure in the East End of London, and his many friends are of opinion that his sudden death, which we recorded last week, has cut short a career of public service which would have carried him into wider notice than did his untiring social work in the district which profited by his constant labours for its betterment. He was in the unusual position of having two professions and being financially independent of both of them, so that he was able to place his knowledge and talents at the disposition of the public bodies concerned with the welfare of the poor in the Mile End district of East London. At the time of his death he was a prospective candidate for the County Council, and was the kind of man who might well have found Spring Gardens a stepping-stone to Westminster, and might have gone far at Westminster.

Stanley Atkinson was born in 1873, being the son of the Rev. J. W. Atkinson, who was then, and is still, pastor of the Latimer Congregational Church in Mile End. He was educated at the Congregational School for the Sons of Ministers and subsequently at St. Bartholomew's Hospital, where he gained an entrance scholarship in 1892. The same year he graduated in science at the University of London, and later he obtained a sizarship at Trinity College, Cambridge, where he went into residence, and took his Mastership in both Arts and Laws in 1901. He was still continuing to read medicine, and in 1902 he qualified at the London Colleges, taking his M.B. at the University of London in the following year. He fulfilled two appointments as a resident officer at the City of London Hospital for Diseases of the Chest, and was called to the Bar as a member of the Inner Temple. Having thus equipped himself, he determined to devote his life to public service rather than private profit, and settling himself at Mile End quickly interested himself in the social progress of its inhabitants. He was appointed a member of the Stepney borough council, to which his advice on matters of public health was always welcome, and he was appointed vice-chairman of the Mile End board of guardians, which body showed its confidence in his judgment by appointing him to represent it upon the Metropolitan Asylums Board. He was also appointed a member of the Central Midwives Board and a Justice of the Peace for the County of London. He was a welcome visitor at the Mile End Infirmary, where he was greatly beloved by the inmates, and he took an active part in the dissemination of knowledge regarding temperance and the prevention of disease, especially tuberculosis, amongst the poor people for whom he lived chiefly. Dr. Atkinson's death will be sincerely regretted by the members of the Medico-Legal Society, among whom he was most popular, and will be remembered as a charming colleague. He took an active interest in the welfare of the society from its foundation in December, 1901. For five years he was one of the honorary secretaries and also for the same number of years assisted in the editorship of the annual Transactions. At the time of his death he was a member of the council. His interest and industry are shown when it is recorded that

among his many other duties he found time to prepare and read the following papers: "Live Birth in Theory and Practice," "The Definition of 'Accident,'" "Some Limitations of Medical Evidence," and "Heredity and Affiliation." He was an honorary member of the sister society in New York, an ex-Vice-President of the Abernethian Society, and a member of the Hunterian and Romilly Societies, as well as of the Society for the Study of Inebriety. His contributions to medical literature were written from the legal side, and included a book, published in 1908, on "The Law in General Practice," at cautionary guide especially for young practitioners conaining some useful advice on matters not strictly legal. Other publications were "Golden Rules of Medical Evidence," "The Office of Midwife," and a number of papers in the medical and legal journals. He was also a frequent editorial contributor to our own columns.

Dr. Atkinson was actively engaged in religious work, and was also a keen Liberal politician. It is believed that the acute cardiac dilatation which brought about his death was due, at least in some measure, to the strenuous exertions he made on behalf of the Liberal candidate for his constituency, for whom he was canvassing within a few days of his end. The constant attention of Dr. J. Fletcher Porter, with Dr. Bertrand Dawson, Dr. W. P. Herringham, and Dr. E. H. Colbeck in consultation, could not avert a tragic end to his physical collapse. The deepest sympathy is due to Dr. Atkinson's family for the sad event which has stopped a career of much promise; he died unmarried.

CONNELL WHIPPLE, L.R.C.P. LOND., M.R.C.S. ENG.,
CONSULTING SURGEON, SOUTH DEVON AND EAST CORNWALL HOSPITAL.

Mr. Connell Whipple died at his residence, St. Andrew's Lodge, Plymouth, on Jan. 21st, in his sixty-eighth year. Mr. Whipple was born in Plymouth, where his father was a distinguished surgeon. He received his medical education at St. Bartholomew's Hospital, London, and qualified M.R.C.S. Eng. and L.R.C.P. Lond. in 1863 and 1864 respectively. After holding the appointment of house surgeon at St. Bartholomew's Hospital, he came to Plymouth and succeeded to his father's practice. Mr. Whipple had been a member of the honorary staff of the South Devon and East Cornwall Hospital for about 35 years; two years ago, on resigning the post of senior surgeon, he was appointed consulting surgeon and elected on the management committee of that charity. He was also consulting surgeon to the Plymouth Dental Hospital. Mr. Whipple was formerly surgeon-lieutenant-colonel in the 3rd Battalion of the Devon Regiment (Militia). He contributed articles to THE LANCET and also to the *British Medical Journal*. Mr. Whipple was extremely popular in Plymouth, and much sympathy is felt in the "Three Towns" for his widow, two sons, and three daughters.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. M. Nedopil, director of the General Hospital at Brunn.—Dr. Jacob Volhard, formerly professor of chemistry in the University of Halle. He was a pupil of Liebig, and had made several important researches in the domain of medical chemistry. He was 75 years of age and had been living in retirement for two or three years only.—Dr. Opitz of Stettin, an orthopœdic surgeon who succumbed to Roentgen-ray ulceration, aged 46 years.—Dr. Johann T. Augustus Steffen, formerly *Oberarzt* of the Children's Hospital at Stettin. He published several volumes of clinical lectures on children's diseases, and wrote many of the articles in Ziemssen's "Handbook of Special Pathology and Therapeutics" and in Gerhardt's "Handbook of Children's Diseases." He was also one of the editors of the "Yearbook of Children's Diseases." His age was 84 years.—Dr. Queirel, professor of clinical midwifery in the Marseilles Medical School and Associate of the Paris Academy of Medicine.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. George Salting the London hospitals will receive a sum amounting to £10,000, and the Prince Alfred Hospital, Sydney, N.S.W., will receive £2000.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in January the following candidates passed in the subjects indicated:—

Surgery.—K. Baylis (Sections I. and II.), Royal Free Hospital; J. A. Jones (Section II.), Manchester; E. D. Richardson (Section II.), St. Mary's Hospital; and J. W. Williams (Sections I. and II.), Guy's Hospital.
Medicine.—J. N. Beadles (Sections I. and II.), Westminster Hospital; J. A. Jones (Section II.), Manchester; and G. S. Richardson (Sections I. and II.), Leeds.
Forensic Medicine.—J. N. Beadles, Westminster Hospital; R. J. Cyriax, St. Mary's Hospital; and S. K. Poole, Guy's Hospital.
Midwifery.—G. J. F. Elphick, St. Mary's Hospital; and J. A. Jones, Manchester.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—J. N. Beadles, R. J. Cyriax, S. K. Poole, and J. W. Williams.

THE UNIVERSITY OF LIVERPOOL.—The Senate at their meeting on Jan. 26th awarded the Diploma in Public Health to the following successful candidates in the recent examinations:—

F. Brechin, M.B., Ch.B.Glasg.; K. R. Dalal, L.M. & S. Bombay, D.T.M. Liverp.; E. H. R. Harries, M.D. (State Medicine), M.B., B.S. Lond., M.R.C.S., L.R.C.P.; and G. F. Oldershaw, M.B., Ch.B. Liverp.

ST. ANDREWS UNIVERSITY.—The following have successfully passed the final examination for the degrees of M.B., Ch.B. of St. Andrews University:—

Donald John Forbes, Dundee; Elizabeth Berwick Forgan, St. Andrews; and Thomas Scollay, Strathkinners.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bahia:* Dr. Joño Americo Garcez Frões has been appointed to the chair of Clinical Propædeutics in succession to the late Dr. Alfredo Th. de Britto.—*Budapest:* Dr. Josef Kovacs has been recognised as *privat-docent* of Diseases of the Chest.—*Giessen:* Dr. R. O. Neumann, Extraordinary Professor at the University of Heidelberg, has been appointed to the chair of Hygiene, in succession to Dr. Kössel.—*Jena:* Dr. Max Henkel, Professor in the University of Greifswald, has been appointed to the chair of Midwifery and Gynæcology, in succession to Dr. K. Franz.—*Kharkoff:* Dr. S. V. Korshun, *privat-docent*, has been appointed to the chair of Hygiene.—*Munich:* Dr. H. Marcus has been recognised as *privat-docent* of Embryology and Anatomy. Dr. Fritz Salzer, *privat-docent* of Ophthalmology; Dr. Herbert Gebele, *privat-docent* of Surgery; Dr. Alois Alzheimer, *privat-docent* of Psychiatry; Dr. Wilhelm Kattwinkel, *privat-docent* of Neurology; Dr. Hermann Kerschensteiner, *privat-docent* of Medicine; Dr. Friedrich Wanner, *privat-docent* of Otology; and Dr. Ludwig Neumayer, *privat-docent* of Histology, have been granted the rank and title of Extraordinary Professor.—*Pittsburg:* Dr. Charles E. Ziegler has been appointed to the chair of Midwifery.—*Prague (German University):* Dr. Horbaczewski, Professor of Medical Chemistry, has been promoted to the House of Peers.—*Rome:* Dr. Alfredo Baduel has been recognised as *privat-docent* of Medical Pathology.—*Strasburg:* Dr. E. Hertel, Extraordinary Professor in the University of Jena, has been appointed Professor of Ophthalmology in succession to Dr. Schirmer, resigned.—*Tomsk:* Dr. Muratoff, *privat-docent* in the University of Moscow, has been appointed to the chair of Neurology and Psychiatry.—*Vienna:* The medical professors have made the following selections for the post of Director of the Gynæcological Clinic, vacant by the death of Professor von Rosthorn: (1) Professor Hofmeier of Würzburg; (2) Professor Selheim of Tübingen; and (3) Professor von Herff of Basle and Professor Wertheim of Vienna.

UNIVERSITY OF DURHAM.—The changes in the constitution of the University of Durham Act (1908) have now been made and on Jan. 25th the Senate of the University held its first meeting for the election of officers and committee. We gave a full account of the changes when the University of Durham Bill was first presented to the House of Commons by Mr. T. W. Hills (THE LANCET, Vol. I., 1908, p. 1586). The new Senate has six Crown members, 16 members nominated by the Durham Division of the University, and 16 by the Newcastle Division. At the first meeting of the reconstituted

Senate Dr. Jevons was appointed Vice-Chancellor, and Sir George Hare Philipson, Dr. Hadow, and Canon Kynaston were appointed Pro-Vice-Chancellors for the ensuing two academical years.

UNIVERSITY OF OXFORD.—The Waynflete Professor of Physiology has appointed Dr. Walter Ramsden, Fellow of Pembroke, Dr. H. M. Vernon, Fellow of Magdalen, and Dr. S. G. Scott to be his demonstrators for three years.

UNIVERSITY OF LEEDS: APPOINTMENTS TO THE PROFESSORSHIPS OF SURGERY.—Mr. H. Littlewood has, to the great regret of his colleagues and to that of the students, tendered his resignation to the council of the University. Mr. Littlewood continued his duties until the end of 1909 to meet the convenience of the department. A strong committee of the council was appointed to consider the future of the surgical teaching, and after full consideration it was arranged to institute a second professorship in the form of a chair of clinical surgery. Mr. R. Lawford Knaggs was appointed professor of surgery, carrying on the old title of the chair and with the responsibility of giving the systematic lectures on surgery. It was arranged that the former number of systematic lectures—namely, 60—should be reduced to 40, and that two lectures should be delivered every week during the first and second terms. To the chair of clinical surgery Mr. B. G. A. Moynihan was appointed. His duties will be to deliver a course of clinical lectures, 10 in number, during the third term. These lectures may be given at the medical school or at the infirmary, at the discretion of the professor. Both professors will be jointly responsible for the conduct of the University examinations in surgery. The clinical lectures on medicine, surgery, and special subjects which are delivered every week at the infirmary will in no way be influenced by these arrangements. These are given by the University clinical lecturers, who are members of the honorary staff of the infirmary.

THE WEST AFRICAN MEDICAL STAFF.—The following officers have retired: Mr. T. E. Frazer Toovey, F.R.C.S., L.R.C.P. Edin., L.F P.S. Glasg., L.M. Rotunda, medical officer, Southern Nigeria, with gratuity from August 9th, 1909; Mr. R. P. Cockin, M.B., B.C. Cantab., medical officer, Southern Nigeria, from August 31st, 1909; Mr. W. R. Larbalestier, M.R.C.S. Eng., L.R.C.P. Lond., L.D.S., medical officer, Southern Nigeria, from Oct. 5th, 1909; and Mr. A. E. Oakeley, M.R.C.S. Eng., L.R.C.P. Lond., medical officer, Northern Nigeria, from Oct. 20th, 1909.—Mr. C. C. Robinson, M.B. Lond., M.R C.S. Eng., L.R.C.P. Lond., medical officer, Southern Nigeria, has been transferred to Straits Settlements from Sept. 24th, 1909.—Mr. T. E. Rice, L.S.A., senior medical officer, Gold Coast, has been promoted to senior sanitary officer, Gold Coast; and Mr. G. C. Walker, M.B., Ch.B. Vict., M.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Lond., medical officer, Gold Coast, to be sanitary officer, Gold Coast.—Mr. H. W. Gush, M.B., Ch.B. Edin., late medical officer, Gold Coast, has been reappointed medical officer, Northern Nigeria, from Jan. 5th, 1910.—The following gentlemen have been appointed to the staff: Mr. J. R. P. Allin, L.R.C.P., L.R.C.S. Irel., L.M. (Southern Nigeria, August 7th, 1909); Mr. T. Hood Rankin, M.B., Ch.B Glasg. (Southern Nigeria, August 28th, 1909); Mr. C. W. O'Keeffe, L.R.C.S., L.R.C.P. Irel., L.A.H. Dub., (Southern Nigeria, August 28th, 1909); Mr. G. M. Gray, M.D. Glasg. (Southern Nigeria, Sept. 25th, 1909); and Mr. J. W. Archibald, M.B., Ch.B. Aberd. (Southern Nigeria, Nov. 17th, 1909).—*Other Colonies:* Mr. R. P. Cockin, M.B., B.C. Cantab., lately an officer of the West African Medical Staff, has been appointed a district medical officer in Cyprus; Mr. P. Harper, M.R.C.S. Eng., L.R.C.P. Lond., has been selected for appointment as medical officer in Fiji; and Mr. R. Cox, M.B., B.S. R.U.I., has been selected for appointment as house surgeon in the Medical Department of the Federated Malay States.

PRESENTATION TO A MEDICAL MAN.—Dr. Robert Inch, M.B., C.M. Edin., who for a considerable number of years has taken an active interest in the public life of Gorebridge, was entertained at a social gathering held at Newbyres Hall, Gorebridge, on Jan. 15th, in honour of the attainment of the semi-jubilee of his coming to the village. The chairman, Mr. George Young, after referring to the debt of gratitude which the people of the district owed to Dr. Inch for his services during the past 25 years, presented him with a massive silver cup and a purse of sovereigns, the gift of 500 subscribers representing all classes of the people. The cup bore the inscription: "Presented to Dr. Robert Inch, Gorebridge, along with a purse of sovereigns, and a bracelet to Mrs. Inch, on the occasion of his semi-jubilee as a medical practitioner in Gorebridge and district, December, 1909."

THE SMITH TURNER PRIZE OF THE BRITISH DENTAL ASSOCIATION.—The next examination for the award of the Smith Turner scholarship in dental mechanics—annual value £30—founded by the British Dental Association in 1907 to honour the memory of James Smith Turner, will be held on April 15th, 1910. The scholarship is open to any registered dental student who, in the opinion of the committee, has financial difficulty in completing the dental curriculum. The examination in dental mechanics is both practical and *viva voce*. The scholarship is tenable for one or two years, at the discretion of the committee, and is paid to any dental school in discharge of fees. Applications must be received on or before April 1st, 1910, addressed to the honorary secretary, British Dental Association, 19, Hanover-square, London, W.

NEWCASTLE-ON-TYNE CLINICAL SOCIETY.—A meeting of this society was held on Jan. 13th, Mr. J. W. Leech, the President, being in the chair. Amongst the 200 members and visitors present were Sir George Hare Philipson (President of the College of Medicine), Sir Thomas Oliver, Dr. David Drummond, Professor T. W. McDowall, and Professor R. P. R. Lyle. Sir J. Halliday Croom delivered the annual address, the subject being "The Physiology, Pathology, and Psychology of the Menopause." The address was highly instructive, laden with suggestion, and was received with enthusiasm by the large audience. In the evening the annual banquet of the society was held in the Armstrong College, Mr. Leech again presiding over a gathering of some 150 members and guests. Amongst those who were present were Lord Durham, Lord Ridley, the Right Hon. R. Spence Watson, the Deputy Lord Mayor, Sir George Hare Philipson, Sir Thomas Oliver, and Professor Bedson (Armstrong College). After the loyal toasts the President proposed "The Guests," and Sir Halliday Croom suitably replied. Lord Durham and Lord Ridley, in amusing and brilliant speeches, proposed and replied to the toast of "The Empire," while Dr. Spence Watson proposed "The Clinical Society," to which Dr. A. J. Collis, a former President, replied. Sir George Hare Philipson and Professor Bedson replied to the toast of "The College of Medicine and the Armstrong College," proposed by the deputy Lord Mayor of Newcastle. The evening was interesting in that it was the largest gathering held by the society, and also that it was the first time it had taken place in the Armstrong College, this desirable and at the same time necessary change being made because of the increase in numbers and activity of the society during the past few years. The membership of the society is now nearly 200, and its ordinary meetings are attended by an average number of between 50 and 60. While it may be invidious to particularise it must be mentioned that the success of the society is very largely due to the work of the President of this year during the half-dozen years of his office as secretary.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ATKINSON, R. A. H., M.B., Ch.B. Vict., has been re-appointed Junior Anæsthetist to the Manchester Royal Infirmary.

BARCLAY, A. E., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been re-appointed Medical Officer for Radiography and Electricity Department at the Manchester Royal Infirmary.

BRADNAM, C. H., has been appointed Dental House Surgeon at Guy's Hospital.

BUCKLEY, J. P., M.B., B.S. Lond., has been re-appointed Medical Officer to the Central Branch of the Manchester Royal Infirmary.

BULL, F. BOCQUET, has been appointed Dental House Surgeon at Guy's Hospital.

COPE, V. ZACHARY, M.D., M.S. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

CORE, D. E., M.B., Ch.B. Vict., has been re-appointed Resident Medical Officer at the Barnes Convalescent Home, Manchester.

CURTIS, HENRY, B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the "Dreadnought" Hospital, and Joint Teacher of Operative Surgery at the London School of Clinical Medicine.

FARNCOMBE, W. T., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the South Birmingham District of the county of Warwick.

GEDGE, ARTHUR SYDNEY, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fifth District by the Devizes (Wilts) Board of Guardians.

GILDER, M. D. D., F.R.C.S. Eng., has been appointed House Surgeon at University College Hospital.

LEECH, E. B., M.D. Vict., M.R.C.P. Lond., has been appointed Medical Registrar to the Manchester Royal Infirmary.

LOVEDAY, G. E., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been re-appointed Director of the Clinical Laboratory at the Manchester Royal Infirmary.

MCBRIDE, J. B., L.R.C.S. Irel., L.K.Q.C.P. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Berkhamsted District of the county of Hertford.

MARTIN, P. S., M.R.C.S., L.R.C.P., has been appointed House Surgeon at University College Hospital.

MORLEY, J., M.B., Ch.B. Vict., has been re-appointed Medical Officer to the Central Branch of the Manchester Royal Infirmary.

O'RORKE, F. T., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Westport District of the county of Mayo.

PEARCE, GEORGE HARPER, D.P.H. Camb., has been appointed Medical Officer of Health and Medical Officer to the Education Committee of the Borough of Batley.

POWELL, R. W., has been appointed Dental House Surgeon at Guy's Hospital.

RAMSDEN, WALTER, M.D., B.Ch. Oxon., has been appointed Demonstrator to the Waynflete Professor of Physiology.

SCOTT, S. G., M.B., B.Ch. Oxon., has been appointed Demonstrator to the Waynflete Professor of Physiology.

THOMPSON, A. F., M.B., Ch.B. Vict., has been re-appointed Senior Anæsthetist to the Manchester Royal Infirmary.

TYLECOTE, F. E., M.D. Vict., M.R.C.P. Lond., has been re-appointed Resident Medical Officer at the Manchester Royal Infirmary.

VERNON, H. M., M.D., B.Ch. Oxon., has been appointed Demonstrator to the Waynflete Professor of Physiology.

WEATHERBE, PHILIP, M.B., Ch.B. Edin., has been appointed one of the Physicians to the Dispensary at Halifax, Canada.

WILSON, S. R., M.B., B.S. Lond., M.B., Ch.B. Vict., has been re-appointed Second Anæsthetist to the Manchester Royal Infirmary.

WRIGLEY, F. G., M.B., Ch.B. Vict., has been re-appointed Gynæcological House Surgeon to the Manchester Royal Infirmary.

YOUNG, EDWARD HERBERT, M.D. Durh., L.R.C.P. Lond., M.R.C.S., L.S.A., D.P.H. Lond., has been appointed Medical Officer of Health of Okehampton (Devon) for one year.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRISTOL ROYAL INFIRMARY.—Two House Physicians and One House Surgeon (salary each £100 per annum); One Obstetric and Ophthalmic House Surgeon and One Throat, Nose, and Ear House Surgeon (salary each £75 per annum); and One Casualty Officer (salary £50 per annum); with apartments, board, and laundry. Also Honorary Assistant Dental Surgeon. Also Honorary Dental Anæsthetist.

BRISTOL UNIVERSITY.—Demonstrator of Anatomy. Also Demonstrator of Physiology. Salary £180 per annum each.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board and lodging.

CAPE OF GOOD HOPE, GREY HOSPITAL, King Williams Town.—Resident House Surgeon, unmarried. Salary at rate of £250 per annum, with quarters and one ration.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

EASTERN DISPENSARY, Leman-street, Whitechapel, E.—Physician Accoucheur.

GLAMORGAN COUNTY COUNCIL.—Medical Officer for Inspection of School Children. Salary £300 per annum with travelling expenses.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with board and residence.

ITALIAN HOSPITAL, Queen-square, W.C.—Honorary Assistant Physician.

KING'S COLLEGE HOSPITAL.—Junior House Anæsthetist. Salary at rate of £50 per annum.

KING'S NORTON INFIRMARY AND WORKHOUSE, Selly Oak, near Birmingham.—Assistant Medical Officer. Salary £100 per annum, with residence and rations.

LEEDS TUBERCULOSIS ASSOCIATION SANATORIUM, Gateforth, near Selby.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

LIVERPOOL UNIVERSITY CANCER RESEARCH LABORATORY.—Research Worker. Salary £150 per annum.

LIVERPOOL WORKHOUSE AND HOSPITAL, Rice-lane, Walton.—Assistant Resident Medical Officer, unmarried. Salary £125 per annum, with board.

LONDON TEMPERANCE HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of 100 guineas per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Assistant Medical Officer. Salary £25 per annum. Also Honorary Assistant Physician.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Fitzroy-square, W.—Two Anæsthetists.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Pathologist. Salary at rate of £100 per annum.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Surgeon, also Junior House Surgeon, both for six months. Salaries at rate of £80 per annum, with board, &c.

PARISH OF LAMBETH.—Medical Officer for District No. 8 (Norwood), also for Home for Aged Poor at Norwood. Salary in each case £50 per annum.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with board, &c.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing. Also House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and washing. Also Honorary Surgeon and Clinical Assistants.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, Great Portland-street, W.—Surgical Registrar. Salary £105 per annum.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.—Pathologist. Salary £200 per annum.

ST. LUKE'S HOSPITAL FOR MENTAL DISEASES, Old-street, London.—Clinical Assistant, unmarried, for six months.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House Surgeon. Also Assistant House Physician. Salary of former £65, and of latter £60 per annum, with board and residence.

SOUTHPORT INFIRMARY.—Junior House and Visiting Surgeon, unmarried, for six months. Salary at rate of £70 per annum, with residence, board, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND WESTOE DISPENSARY.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

SUNDERLAND INFIRMARY.—Two House Surgeons. Salary £80 per annum, with board, residence, and washing.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Medical Officer-in-Charge of the Electro-Radiographic Department.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Maiden Newton, in the county of Dorset; at Leuchars, in the county of Fife; and at Lytham, in the county of Lancaster.

Births, Marriages, and Deaths.

BIRTHS.

BALL.—On Jan. 25th, at Hunstanton, Norfolk, the wife of Charles R. H. Ball, M.R.C.S., L.R.C.P., of a son.

HANKEY.—On Jan. 16th, the wife of Stanley J. Hankey, L.D.S. R.C.S. Eng., Teignmouth-road, Cricklewood—a son (Ian Brian).

SEARS.—On Jan. 20th, at Point View, Burnt Ash-hill, Lee, S.E., the wife of C. Newton Sears, M.D., B.S. Lond., M.R.C.S., L.R.C.P., of a daughter.

WILSON.—On Jan. 7th, at Paddock, Huddersfield, the wife of David Wilson, jun., M.B., M.R.C.S., of a daughter.

MARRIAGES.

ELLISTON—CADMAN.—On Jan. 18th, at Stanford-on-Soar Church, Chatterton Eric Elliston, M.D. Edin., to Elizabeth Gwladys, eldest daughter of Walter Cadman, of Stanford Hill, Notts, and Loughton, Herts.

MARTIN—VARDON.—On Jan. 18th, at Christ Church, Epsom, Thomas Martin, M.R.C.S., L.R.C.P., of Thatcham, Berks, to Olive Mary, only daughter of Harry W. Vardon, of Epsom.

DEATHS.

ATKINSON.—On Jan. 18th, from heart failure, after a few days' illness, Dr. Stanley B. Atkinson, M.A., J.P., in his 37th year.

PAGE-MAY.—On Jan. 19th, at Brighton, after a few hours' illness, William Page-May, M.D., F.R.C.P., D.Sc., of Great Cumberland-place.

ROUSE.—On Jan. 20th, at Firlands, Reigate, Robert Rouse, late Deputy-Surgeon-General, the Frontier Force, I.M.S., retired, aged 77.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"PUERPERAL FEVER": A QUESTION OF NOMENCLATURE.

Dr. J. Savege, district medical officer to the Sculcoates board of guardians, was summoned to the Hull police court on Jan. 20th, at the instance of the Hull corporation under the Infectious Diseases Notification Act, for failing to notify two cases of puerperal fever.

The case was heard before the stipendiary magistrate (Mr. J. G. Hay Halkett). Mr. J. B. Chapman (corporation) prosecuted, and Mr. T. W. Holdich defended.

Dr. J. Wright Mason, medical officer of health of Hull, said that from information received from the midwives' inspector there had been two cases of puerperal fever in Hull. Those cases had not been notified.

A letter was given to the magistrate which had been written by Dr. Savege to the finance committee of the Sculcoates board of guardians in which he stated that the two women in question were suffering from puerperal fever.

Mr. Holdich, for the defence, admitted the letter, but said that Dr. Savege had used a phrase "puerperal fever" wrongly. The fever that the two women were suffering from was in no sense one that was necessarily attached to women in the lying-in state. The facts of the two cases were that two women living in a poor neighbourhood required assistance of a midwife from the lying-in charity. It was one of the regulations of the Central Midwives Board that in any case in which the temperature of the patient rose above 100° F. it was the duty of the midwife to ask for medical aid. The midwife in those cases had asked medical aid of the Sculcoates board of guardians because the temperature of the patients had risen above 100° F. Dr. Savege had attended to the two women.

Dr. Savege said that when he had written that letter he had used the words "puerperal fever" in the dictionary sense and not in the sense notifiable under the Act. There was nothing in the word "puerperal" to suggest a septic state. In his conception of the word "puerperal" there were 20 different kinds of fever, but there was only one kind which should be notified under the Act. The two women in question were not suffering from puerperal fever in the notifiable sense.

Corroborative evidence was given by Dr. T. Cameron and Sister Edith, head midwife of the Lying-in Charity, who said that the two women had recovered.

The magistrate dismissed the summonses and said that Dr. Savege had got into difficulty by the loose way in which he had described the illness of the two women.

We are glad that the occurrence occasioned Dr. Savege no more inconvenience than a morning in a police-court, but we are bound to admit that as he had stated the cases to be puerperal the Hull corporation, when the occurrence came to its knowledge, had no option but to prosecute, as the Infectious Diseases Notification Act very clearly lays down the practitioner's duty under the circumstances. The expression "puerperal fever" is, it is true, a thoroughly unsatisfactory one, for it has been used to connote a diverse series of conditions complicating the puerperium. At the same time, a practitioner is ill-advised to speak of a slight and transient rise of temperature as "puerperal fever" when there is no question of its being due to septic absorption from a local infective condition of the uterus or vagina, for the use of that expression to describe a pathological condition carries with it the statutory duty of notification.

PLAGUE INFECTION IN A CALIFORNIAN WOOD RAT.

AN addition to the list of animals capable of harbouring the bacillus pestis is announced by Dr. W. C. Rucker in the *Public Health Reports* of the U.S.A. Public Health and Marine Hospital Service for Jan. 7th. The animal in question is the Neotoma fuscipes anectens (Elliot). Several species or varieties of this genus are found in California. They are indigenous, and although called "wood rats" are very different from the imported true rats (Mus norvegicus). They are found in wooded localities where they construct elaborate "nests," which are sometimes 6 or 7 feet in diameter and 3 feet high. In the Neotoma fuscipes the body and tail are of nearly equal length, each measuring about 8 inches.

ROBBEN ISLAND LEPERS.

THE Select Committee of the Cape House of Assembly appointed to inquire into the condition of the lepers on Robben Island have, after visiting the station and examining witnesses, presented their report. It states that, with the exception of a few matters, there was a gratifying absence of serious complaint on the part of patients as regards their treatment and accommodation, "a fact which reflects favourably on the inadequate staff on the island under the unsuitable conditions prevailing there." The evidence disclosed, however, that the water-supply was brackish and deficient, and the committee recommend the adoption of a satisfactory drainage scheme, preferably such as the Scott-Moncrieff, rendering the sewage inert before disposal in the sea, adding that "at present the germ-laden drainage is cast into the sea and fed upon by fish which are eaten both on the island and the mainland." Both amongst the patients and many of the responsible staff the chief complaint against the island is on account of its damp sea winds, its glare, its loneliness, and the separation it entails upon the lepers and their friends, who are averse to sea-travelling, it being stated by many that the frequency of eye and chest diseases is due to the island's climatic conditions. The committee strongly urge the appointment of a Government commission to consider the matter "with a view to ascertaining whether it may not be possible to open a leper settlement on the mainland for at least some of the Robben Island lepers." The committee further recommend the immediate erection of one large hospital building, and provision whereby the necessary compulsory removals of serious cases from dormitories to hospital may be enforced; the separation of the 25 leper children from the adults; and the provision of better accommodation for staff attendants. One of the principal witnesses before the committee, Dr. Gregory, expressed the opinion that the advantages of Robben Island as a leper settlement far outweighed its drawbacks. He did not think there was any truth in the statement that the sea air was against the health of the lepers themselves; and so far as segregation went, his opinion was that it was the only means at present known of eradicating leprosy.

BED-MAKING.

To the Editor of THE LANCET.

SIR,—May I call attention in your columns to what I believe to be a danger, unsuspected by many, in the making of beds? I refer to the custom of throwing back the bed-clothes in the morning "to air the bed" over the back rail of the bedstead or over a chair placed at the foot of the bed. The very part of the bed-clothes which comes nearest to one's mouth and nose at night is often thus thrown or drops down into direct contact with the floor, which may be clean or may not be so, and if the passage at the foot of the bed is not very wide anybody going upstairs with dirty slippers or boots before the bed is re-made, or even when it is being re-made, and passing round the end of the bed would also probably trample on the part that comes in contact with one's mouth at night time. It seems to me that to avoid this danger the foot-rail of the bedstead should be artificially raised in height by another rail somewhat in the form of a capital H clamped on to it, and that new bedsteads should be made with some such holdfast contrivance which the ingenious bedstead-maker could easily contrive in order to avoid this unhygienic occurrence.—I am, Sir, yours faithfully,

Jan. 22nd, 1910. FULCRUM.

ETHER AS AN INTOXICANT.

THE *Irish Times* recently reported a case heard at Cookstown petty sessions, Co. Tyrone, in which Elizabeth McGarvey, a married woman, was charged with ill-treating her children and with being a habitual drunkard. The defendant's husband, a gardener, said he had been married to her about seven years. Three months after the marriage he noticed that she was addicted to ether-drinking. The habit had gradually increased since. He had seen her drunk from ether several times during the last six months, and when in that condition, "in the horrors of her drink," she had struck the children. To his knowledge she spent about 2*s.* 6*d.* every week on ether for her own consumption. The defendant was committed for trial. Mr. John Glasgow, one of the six magistrates on the bench, said this was the second consecutive court in which they had had to deal with sad cases having their origin in ether-drinking. He proposed that "we, as magistrates, assembled at petty sessions, Cookstown, which includes in its area a considerable district in which the drinking of ether as an intoxicant is indulged in, pray the Chief Secretary to the Lord Lieutenant of Ireland to so amend the law scheduling ether as a poison as to make it compulsory on the chemist to keep a record of the purchasers and the quantities purchased, as is done in the case of many poisons, and, if practicable, to limit any one sale to a small quantity, as we have reason to believe it is purchased in considerable quantities and resold illicitly in certain districts." The chairman (Mr. S. E. Ekin) seconded the resolution, and it was unanimously adopted.

A CONVENIENT LEG-REST.

THE Purpose Manufacturing Company, Teddington, have made and placed upon the market an article of furniture with the somewhat irritating name of "The Kumfee," which will be of interest to our readers, as it was designed by a medical man. It is primarily intended to meet the objection which the average man has for the average easy chair—namely, that the seat is not long enough. It consists of a cushioned frame swinging on a stand, and forming, when placed in front of a chair, an extension of the seat, long enough to support both thighs and legs at a convenient angle. When it is no longer needed as a leg-rest the frame swings up vertically upon its stand and becomes a fire-screen with a ledge that can be let down at right angles to serve as a convenient occasional table. The article would not only be of use in an invalid's room, but doubtless acceptable to the weary practitioner after a hard day's work. It can be upholstered to meet individual requirements.

THE "WELLCOME" PHOTOGRAPHIC EXPOSURE RECORD AND DIARY, 1910.

WE have received once more the handy little "Wellcome" Photographic Diary issued by Messrs. Burroughs, Wellcome and Co., and again we feel justified in recommending it to the attention of the large number of medical men, who are also amateur photographers, who will find it cheap at a shilling. Those few who have practised their pictorial hobby since the days of the wet plate, when the enthusiastic operator had to go forth equipped with a small tent and all the paraphernalia of the dark room in order to obtain a landscape negative, will agree that chemistry has made no greater advances during the last quarter of a century than in its application to photography, and Messrs. Burroughs and Wellcome, by applying their well-known "Tabloid" methods to the preparation of photographic reagents, have done much to simplify the various processes of developing and printing. Full directions for the use of their various photographic products are given in the front pages of this diary, following which are pages ruled for notes concerning the conditions of individual exposures. Due stress is laid on the advantage of "factorial" development. To our mind, however, the best feature of the book is the ingenious exposure calculator upon the last page. Of course, no purely mathematical contrivance can give quite as accurate results as an actinometer, but we have tested this calculator on many occasions and under varying conditions and are satisfied that with the elasticity of exposure secured by the modern plate, and with the exercise of ordinary intelligence, constant and most satisfactory results are to be obtained by following its indications. It is interesting to note that separate editions of the book are issued for the Northern and Southern Hemispheres and for the United States of America respectively. We do not notice any reference to colour photography in the book, and we cannot agree that the device of staining slides or prints uniformly with weak solutions of aniline dyes can ever give "artistic effects." To our mind the results are garish and unpleasant, and not to be compared with those obtained by the various colour-toning methods or by carbon printing.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4.30 P.M.

Paper:

Dr. Bashford: The Immunity Reaction of Cancer.

Discussion:

On Proprietary, Patent, and Secret Remedies, (opened by Professor W. E. Dixon).

PATHOLOGICAL SECTION (Hon. Secretaries—L. S. Dudgeon, C. Bolton): at the National Hospital, Queen-square, W.C., at 8 P.M.

Dr. F. W. Mott, F.R.S., and Dr. Edgar Silvester: Changes in the Nerve Cells of a Man who Died 7 Hours after receiving a Current of 10,000 Volts

Dr. F. W. Mott, F.R.S.: Two Specimens from Professor Marinesco illustrating Regeneration of Nerves.

Dr. A. J. Hall: Two Cases of Cyst of Choroid Plexus.

Dr. Batten and Dr. Gordon Holmes: A Recent Case of Acute Poliomyelitis.

Dr. Hinds Howell: Two Cases of Tumour of the Pineal Gland.

And other communications.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—George C. Cathcart, L. Hemington Pegler).

Cases and Specimens.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Llewelyn Powell, R. W. Collum): at 8.30 P.M.

Adjourned Discussion:

On Mr. Bellamy Gardner's Paper on Lymphatism (opened by Dr. Farquhar Buzzard).

SATURDAY.

OTOLOGICAL SECTION (Hon. Secretaries—Hunter F. Tod, H. J. Marriage): at 10 A.M.

Cases and Specimens.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY. 4 P.M., Dr. J. Galloway: Clinique (Skin). 5.15 P.M., Lecture:—Mr. N. Raw (Liverpool): Treatment of the Surgical Forms of Tuberculosis by Koch's Human Tuberculin.

TUESDAY.—4 P.M., Dr. W. Carr: Clinique (Medical). 5.15 P.M., Lecture:—Mr. H. L. Eason: Affections of the Eye caused by Inflammation of the Accessory Sinuses of the Nose.

WEDNESDAY.—4 P.M., Mr. J. Berry: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. Powell: The Treatment of Mastoiditis.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. J. Clarke: Some Painful Surgical Conditions of the Feet.

FRIDAY.—4 P.M., Mr. H. Tilley: Clinique (Ear, Nose and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Robinson: Gynæcology.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. Beddard: Medicine.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Dr. G. Stewart: The Significance of Ocular Paralysis in the Diagnosis of Nervous Disease.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Low: Sleeping Sickness.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 11 A.M., Mr. B. Harman: Diseases of the Eyes. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Lecture:—Mr. H. W. Carson: Intussusception.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Mr. Cargill: The Normal Fundus Oculi and its Common Anomalies.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.30 P.M., Special Lecture:—Dr. Rankin: Meningitis and its Treatment.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. McGavin: Operative and Post-operative Accidents and Complications.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture: Mr. S. Scott: Researches in Otology.

FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. D. Armour: Surgery of Paralytic Deformities.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Mr. G. Waugh: Spinal Caries.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.

TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.

WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.

FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

ST. MARK'S HOSPITAL FOR CANCER AND OTHER DISEASES OF THE RECTUM, City-road, E.C.

MONDAY.—5.30 P.M., Lecture:—Mr. F. S. Edwards: Fistula.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. Atkinson: The Nose.
THURSDAY.—4.30 P.M., Clinical Lecture:—Dr. Atkinson: Syphilis of the Throat.
FRIDAY.—3.45 P.M., Lecture:—Dr. D. McKenzie: Labyrinth.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—The Solution of the Confusion between Pityriasis Rubra Pilaris and Lichen, and the Treatment of Each.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (5th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1909 were given in THE LANCET of Dec. 25th, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 26th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 20	29·56	W.	...	49	41	36	36	37	Fine
,, 21	29·74	N.W.	...	50	39	32	31	33	Fine
,, 22	29·92	N.	...	55	43	30	...	31	Cloudy
,, 23	30·02	W.	0·04	44	43	31	33	34	Cloudy
,, 24	28·73	S.W.	0·45	50	43	34	42	43	Raining
,, 25	29·07	N.E.	0·09	62	38	34	33	34	Cloudy
,, 26	29·18	N.W.	...	53	36	25	...	28	Cloudy

Communications, Letters, &c., have been received from—

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